

# TRANSPORTATION

## APPENDICES A, B, C, D, E, F

October 2015

Bridge Project  
P.I.N. 5760.40 BINs 5522000 and 5522010  
American Falls Bridges  
Niagara Falls State Park  
Niagara County  
City of Niagara Falls



**ANDREW M. CUOMO**  
Governor

### Parks, Recreation and Historic Preservation

**ROSE HARVEY**  
Commissioner



**ANDREW M. CUOMO**  
Governor

### Department of Transportation

**MATTHEW J. DRISCOLL**  
Commissioner



U.S. Department of Transportation  
Federal Highway Administration

APPENDIX A

# APPENDICES VOLUME I.

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Appendices A,B,C,D,E,F

# APPENDIX A.

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## Maps, Plans, Profiles & Typical Sections

Location Maps

Existing Plan, Profile, & Sections

Proposed Plans, Profiles, & Sections

Cofferdam Plans

# American Falls Bridges

NYSDOT

Design Report Drawing List

GPI Job Number 2013080

Last Updated: 11/4/2015 By: BJC

DWGNo.	Sheet	Drawing Title
A - 1	1	Location Map 1
A - 1	2	Location Map 2
A - 2	1	Existing General Plan (Sheet 1 of 4)
A - 2	2	Existing General Plan (Sheet 2 of 4)
A - 2	3	Existing General Plan (Sheet 3 of 4)
A - 2	4	Existing General Plan (Sheet 4 of 4)
A - 3	1	Existing Profile
A - 4	1	Existing Typical Bridge Section
A - 4	2	Existing Typical Roadway Section
A - 5	1	Existing Elevation
A - 6	1	General Plan - Precast Arch (Sheet 1 of 4)
A - 6	2	General Plan - Precast Arch (Sheet 2 of 4)
A - 6	3	General Plan - Precast Arch (Sheet 3 of 4)
A - 6	4	General Plan - Precast Arch (Sheet 4 of 4)
A - 6	5	Profile - Precast Arch (Sheet 1 of 4)
A - 6	6	Profile - Precast Arch (Sheet 2 of 4)
A - 6	7	Profile - Precast Arch (Sheet 3 of 4)
A - 6	8	Profile - Precast Arch (Sheet 4 of 4)
A - 7	1	General Plan - Haunched Girder (Sheet 1 of 4)
A - 7	2	General Plan - Haunched Girder (Sheet 2 of 4)
A - 7	3	General Plan - Haunched Girder (Sheet 3 of 4)
A - 7	4	General Plan - Haunched Girder (Sheet 4 of 4)
A - 7	5	Profile - Haunched Girder (Sheet 1 of 4)
A - 7	6	Profile - Haunched Girder (Sheet 2 of 4)
A - 7	7	Profile - Haunched Girder (Sheet 3 of 4)
A - 7	8	Profile - Haunched Girder (Sheet 4 of 4)
A - 8	1	General Plan - Steel Tied Arch (Sheet 1 of 4)
A - 8	2	General Plan - Steel Tied Arch (Sheet 2 of 4)
A - 8	3	General Plan - Steel Tied Arch (Sheet 3 of 4)
A - 8	4	General Plan - Steel Tied Arch (Sheet 4 of 4)
A - 8	5	Profile - Steel Tied Arch (Sheet 1 of 4)
A - 8	6	Profile - Steel Tied Arch (Sheet 2 of 4)
A - 8	7	Profile - Steel Tied Arch (Sheet 3 of 4)
A - 8	8	Profile - Steel Tied Arch (Sheet 4 of 4)
A - 9	1	General Plan - Steel Girder (Sheet 1 of 4)
A - 9	2	General Plan - Steel Girder (Sheet 2 of 4)
A - 9	3	General Plan - Steel Girder (Sheet 3 of 4)
A - 9	4	General Plan - Steel Girder (Sheet 4 of 4)
A - 9	5	Profile - Steel Girder (Sheet 1 of 4)
A - 9	6	Profile - Steel Girder (Sheet 2 of 4)
A - 9	7	Profile - Steel Girder (Sheet 3 of 4)
A - 9	8	Profile - Steel Girder (Sheet 4 of 4)

DWGNo.	Sheet	Drawing Title
A - 10	1	General Plan - Precast Arch (Sheet 1 of 4)
A - 10	2	General Plan - Precast Arch (Sheet 2 of 4)
A - 10	3	General Plan - Precast Arch (Sheet 3 of 4)
A - 10	4	General Plan - Precast Arch (Sheet 4 of 4)
A - 10	5	Profile - Precast Arch (Sheet 1 of 4)
A - 10	6	Profile - Precast Arch (Sheet 2 of 4)
A - 10	7	Profile - Precast Arch (Sheet 3 of 4)
A - 10	8	Profile - Precast Arch (Sheet 4 of 4)
A - 11	1	General Plan - Haunched Girder (Sheet 1 of 4)
A - 11	2	General Plan - Haunched Girder (Sheet 2 of 4)
A - 11	3	General Plan - Haunched Girder (Sheet 3 of 4)
A - 11	4	General Plan - Haunched Girder (Sheet 4 of 4)
A - 11	5	Profile - Haunched Girder (Sheet 1 of 4)
A - 11	6	Profile - Haunched Girder (Sheet 2 of 4)
A - 11	7	Profile - Haunched Girder (Sheet 3 of 4)
A - 11	8	Profile - Haunched Girder (Sheet 4 of 4)
A - 12	1	General Plan - Steel Tied Arch (Sheet 1 of 4)
A - 12	2	General Plan - Steel Tied Arch (Sheet 2 of 4)
A - 12	3	General Plan - Steel Tied Arch (Sheet 3 of 4)
A - 12	4	General Plan - Steel Tied Arch (Sheet 4 of 4)
A - 12	5	Profile - Steel Tied Arch (Sheet 1 of 4)
A - 12	6	Profile - Steel Tied Arch (Sheet 2 of 4)
A - 12	7	Profile - Steel Tied Arch (Sheet 3 of 4)
A - 12	8	Profile - Steel Tied Arch (Sheet 4 of 4)
A - 13	1	General Plan - Steel Girder (Sheet 1 of 4)
A - 13	2	General Plan - Steel Girder (Sheet 2 of 4)
A - 13	3	General Plan - Steel Girder (Sheet 3 of 4)
A - 13	4	General Plan - Steel Girder (Sheet 4 of 4)
A - 13	5	Profile - Steel Girder (Sheet 1 of 4)
A - 13	6	Profile - Steel Girder (Sheet 2 of 4)
A - 13	7	Profile - Steel Girder (Sheet 3 of 4)
A - 13	8	Profile - Steel Girder (Sheet 4 of 4)
A - 14	1	Typical Roadway Section - Green Island
A - 14	2	Typical Bridge Section - Precast Concrete Arch
A - 14	3	Typical Bridge Section - Precast Haunched Girder
A - 14	4	Typical Bridge Section - Steel Tied Arch
A - 14	5	Typical Bridge Section - Steel Girder (Main Land to Green Island)
A - 14	6	Typical Bridge Section - Steel Girder (Green Island to Goat Island)
A - 15	1	Bridge Plan - Mainland to Green Island (Precast Arch)
A - 15	2	Bridge Elevation - Mainland to Green Island (Precast Arch)
A - 16	1	Bridge Plan - Mainland to Green Island (Haunched Girder)
A - 16	2	Bridge Elevation - Mainland to Green Island (Haunched Girder)
A - 17	1	Bridge Plan - Mainland to Green Island (Steel Tied Arch)
A - 17	2	Bridge Elevation - Mainland to Green Island (Steel Tied Arch)
A - 18	1	Bridge Plan - Mainland to Green Island (Steel Girder)
A - 18	2	Bridge Elevation - Mainland to Green Island (Steel Girder)
A - 19	1	Bridge Plan - Green Island to Goat Island (Precast Arch) (Three-Span)
A - 19	2	Bridge Elevation - Green Island to Goat Island (Precast Arch) (Three Span)
A - 20	1	Bridge Plan - Green Island to Goat Island (Precast Arch) (Two-Span)
A - 20	2	Bridge Elevation - Green Island to Goat Island (Precast Arch) (Two Span)
A - 21	1	Bridge Plan - Green Island to Goat Island (Haunched Girder)
A - 21	2	Bridge Elevation - Green Island to Goat Island (Haunched Girder)
A - 22	1	Bridge Plan - Green Island to Goat Island (Steel Tied Arch)
A - 22	2	Bridge Elevation - Green Island to Goat Island (Steel Tied Arch)
A - 23	1	Bridge Plan - Green Island to Goat Island (Steel Girder)
A - 23	2	Bridge Elevation - Green Island to Goat Island (Steel Girder)
A - 24	1	Full Channel "1969" Cofferdam Plan
A - 24	2	Full Channel "1969" Cofferdam Section
A - 25	1	Full Channel "1969" Cofferdam Plan - With Ice Protection
A - 25	2	Full Channel "1969" Cofferdam Section - With Ice Protection
A - 26	1	Green Island to Goat Island Cofferdam Plan
A - 26	2	Green Island to Goat Island Cofferdam Sections
A - 27	1	Mainland to Green Island Structural Cofferdam Plan
A - 27	2	Mainland to Green Island Structural Cofferdam Plan and Sections
A - 27	3	Mainland to Green Island Structural Cofferdam Sections

GRID NORTH



AMERICAN FALLS BRIDGES	
PROJECT LOCATION MAP	
BRIDGES: 5522000 & 5522010	
COUNTY: NIAGARA	PIN 576040



**PROJECT LOCATION  
(SEE SHEET 2)**

FILE NAME : DESIGN REPORT  
DATE/TIME : 08/05/2015 09:23:45  
USER : DONOVAN

ALL DIMENSIONS ARE IN FT. UNLESS OTHERWISE NOTED



STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

DRAWING NO. A-1

SHEET NO. 1

REGION 5



AMERICAN FALLS BRIDGES	
PROJECT LOCATION MAP	
BRIDGES: 5522000 & 5522010	
COUNTY: NIAGARA	PIN 576040



FILE NAME = DESIGN REPORT  
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 USER = DONROSENAME



ALL DIMENSIONS ARE IN FT UNLESS OTHERWISE NOTED		
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PROJECT MANAGER: T. WOODBURY

CHECK

DRAFTING: A. BALANEVSKIY

CHECK

DESIGN: B. CARLSON

JOB MANAGER

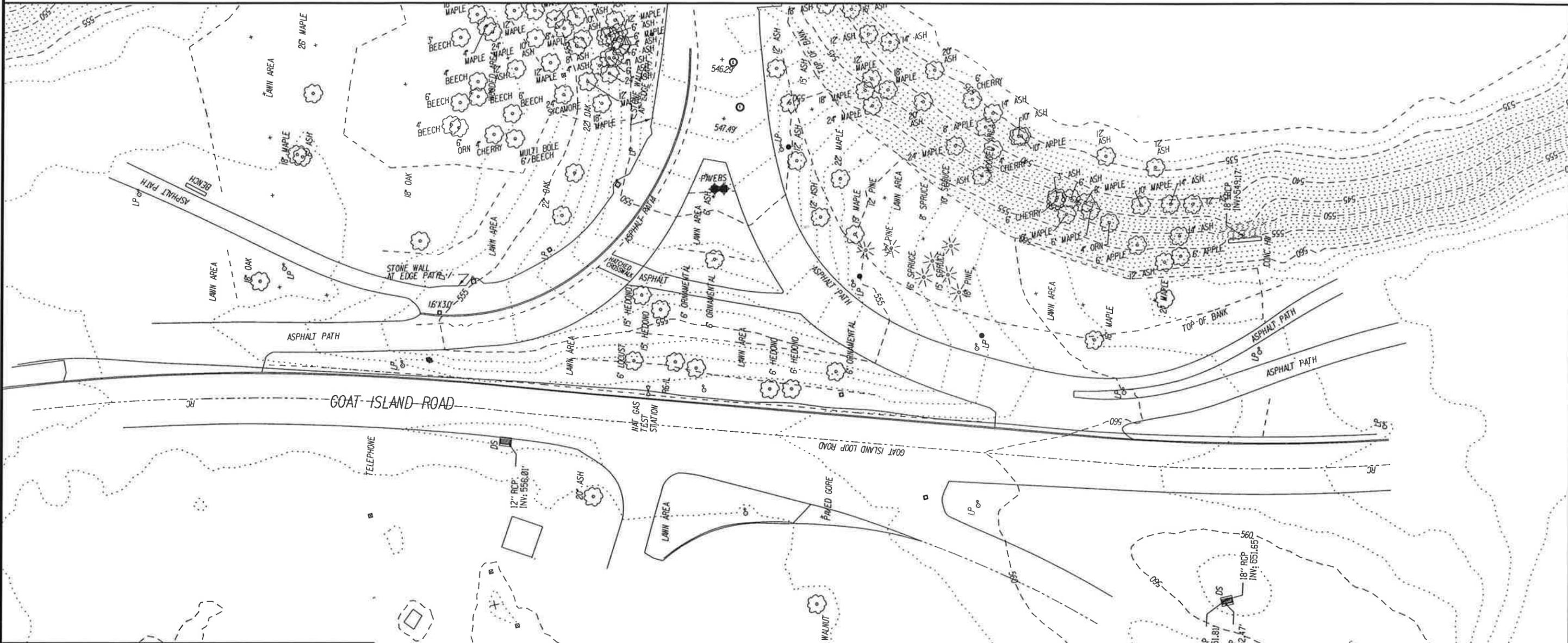
DESIGN SUPERVISOR

GRID NORTH



MATCHLINE-SEE SHEET TWO

MATCHLINE-SEE SHEET TWO



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES
COUNTY: NIAGARA

PIN 576040
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BRIDGES 5522000 5522010
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CULVERTS NONE
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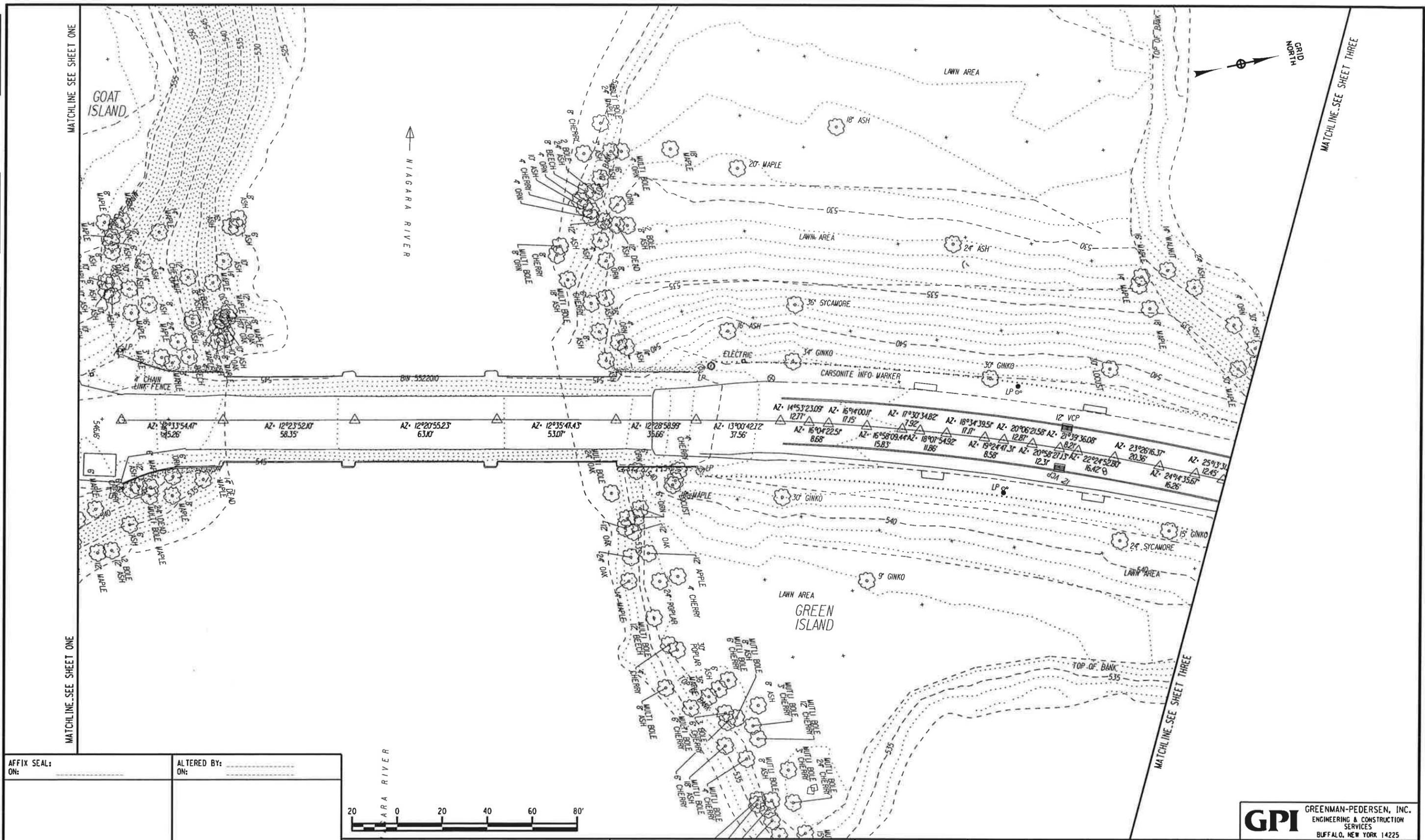
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GENERAL PLAN- EXISTING

CONTRACT NUMBER	
DRAWING NO. A-2	
SHEET NO. 1	

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES
COUNTY: NIAGARA

PIN 576040
BRIDGES 5522000 552010
CULVERTS NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED
GENERAL PLAN- EXISTING
CONTRACT NUMBER
DRAWING NO. A-2
SHEET NO. 2

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION  
 SERVICES  
 BUFFALO, NEW YORK 14225

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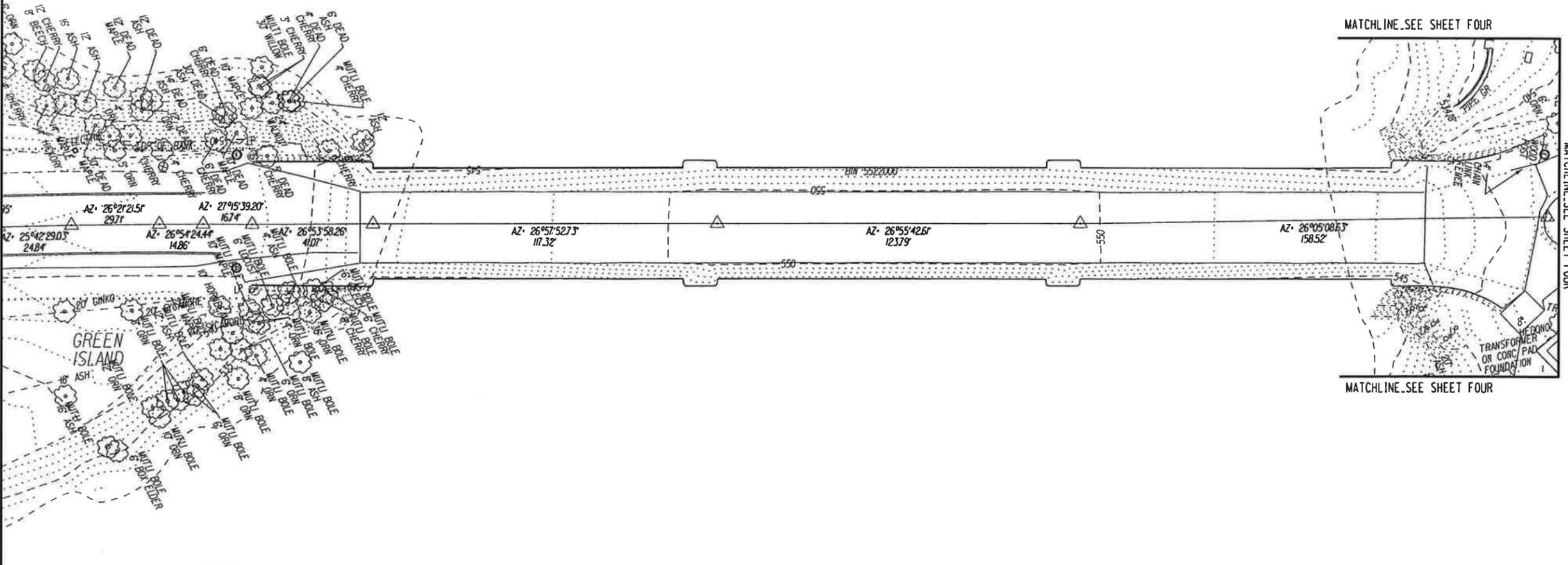
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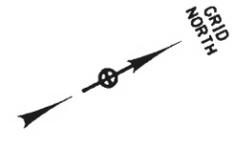
DESIGN SUPERVISOR: \_\_\_\_\_ JOB MANAGER: \_\_\_\_\_ DESIGN B. CARLSON CHECK: \_\_\_\_\_ DRAFTING A. BALANEYSKIY CHECK: \_\_\_\_\_ PROJECT MANAGER: \_\_\_\_\_

MATCHLINE-SEE SHEET TWO

MATCHLINE-SEE SHEET TWO



↑  
 NIAGARA RIVER



MATCHLINE-SEE SHEET FOUR

MATCHLINE-SEE SHEET FOUR

MATCHLINE-SEE SHEET FOUR

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

AMERICAN FALLS BRIDGE  
 \_\_\_\_\_  
 \_\_\_\_\_  
 COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
 GENERAL PLAN- EXISTING

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

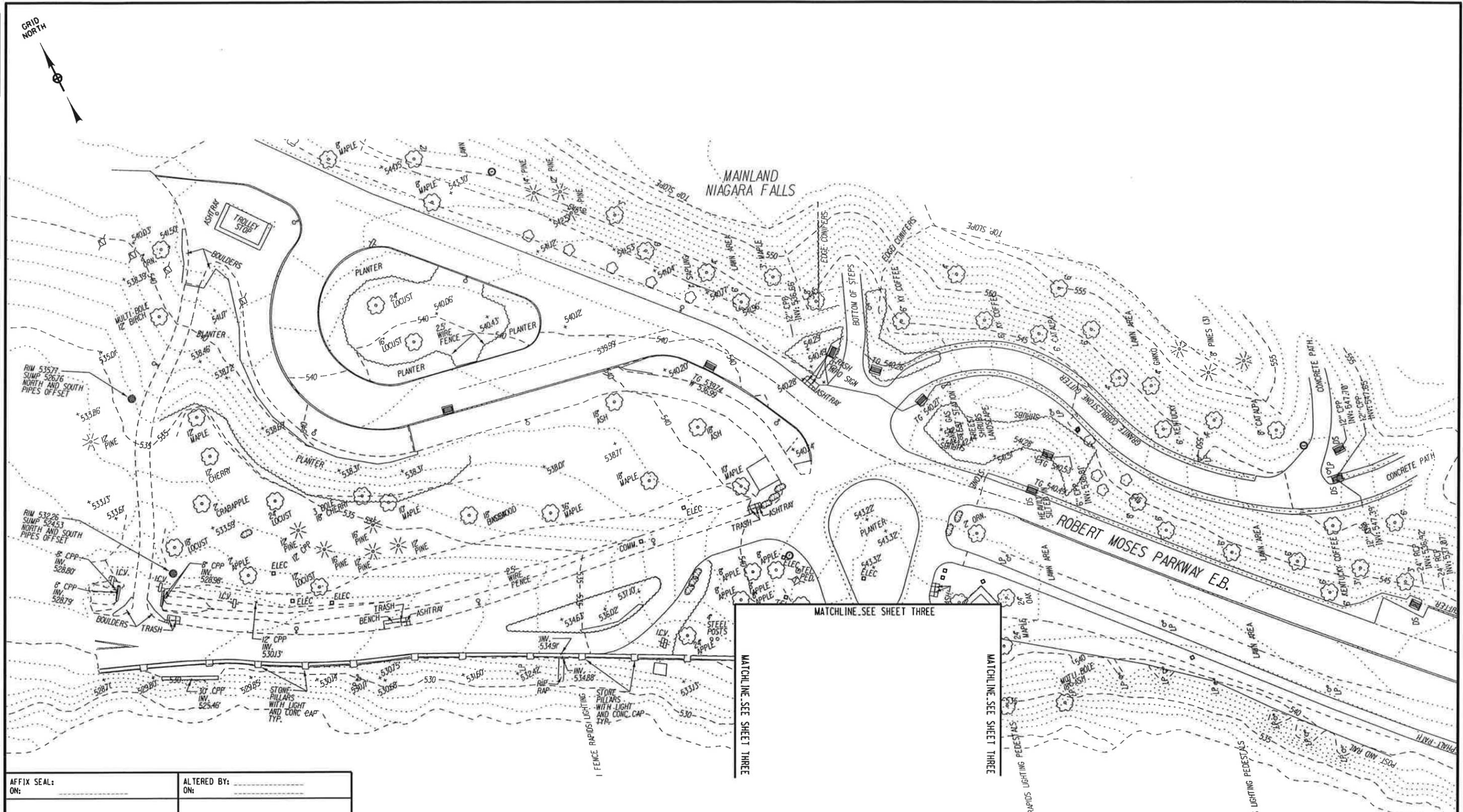
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 SHEET NO. 3

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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 USER = 11:30:10 AM

DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEWSKIY  
 CHECK  
 PROJECT MANAGER



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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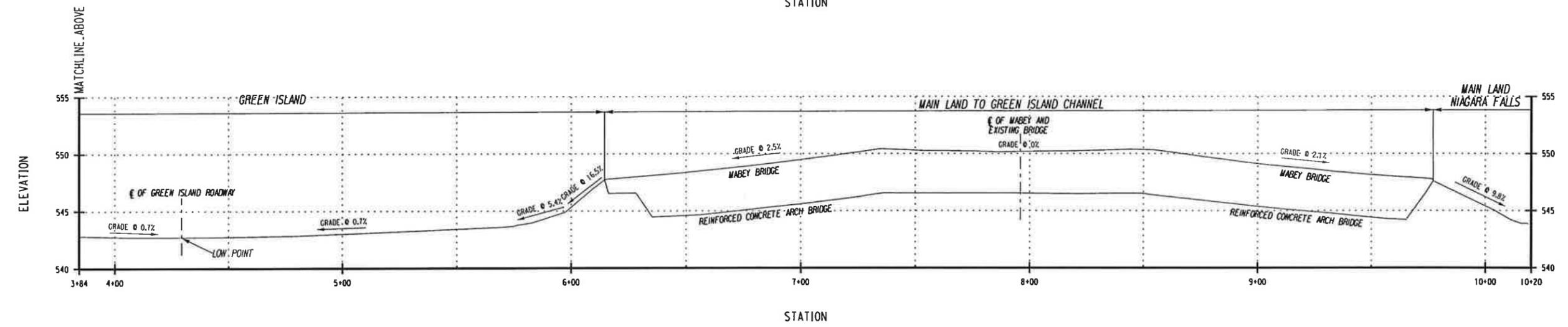
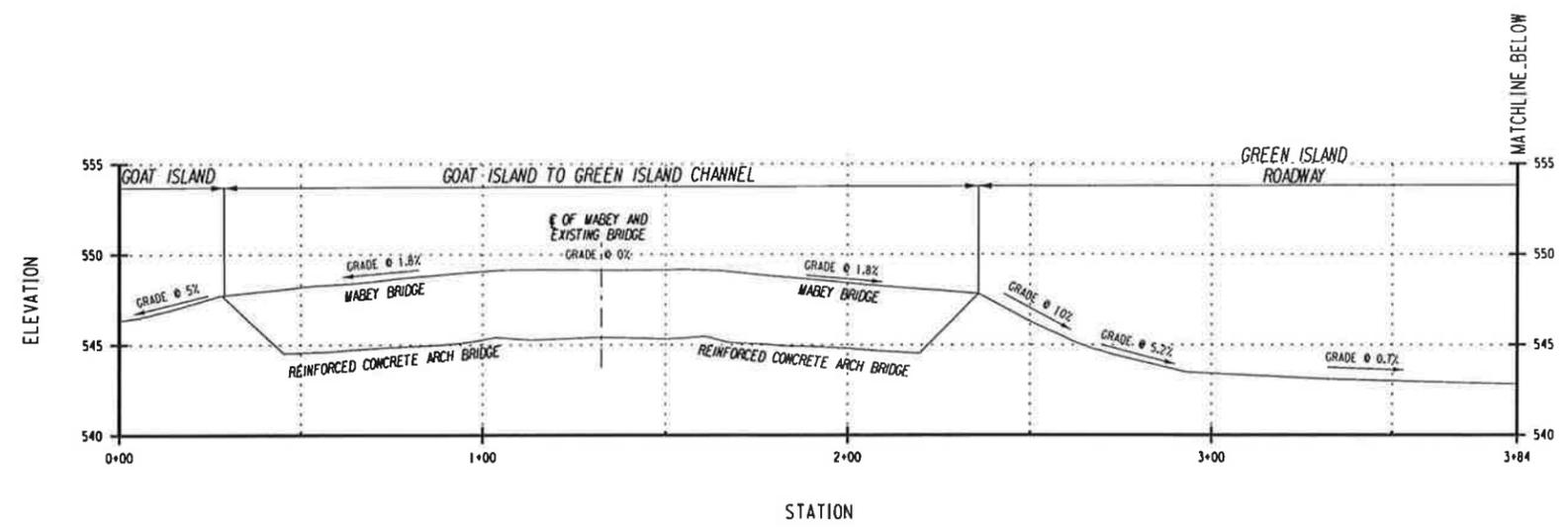
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					GENERAL PLAN - EXISTING	
	COUNTY: NIAGARA					DRAWING NO. A-2
						SHEET NO. 4

<p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p>		<p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5        DOCUMENT NAME: DESIGN REPORT</p>	
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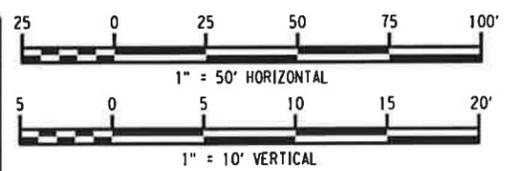
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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 USER : 45948 PM

PROJECT MANAGER  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 JOB MANAGER



AMERICAN FALLS BRIDGES EXISTING PROFILE



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
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	COUNTY: NIAGARA					DRAWING NO. A-3 SHEET NO. 1

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 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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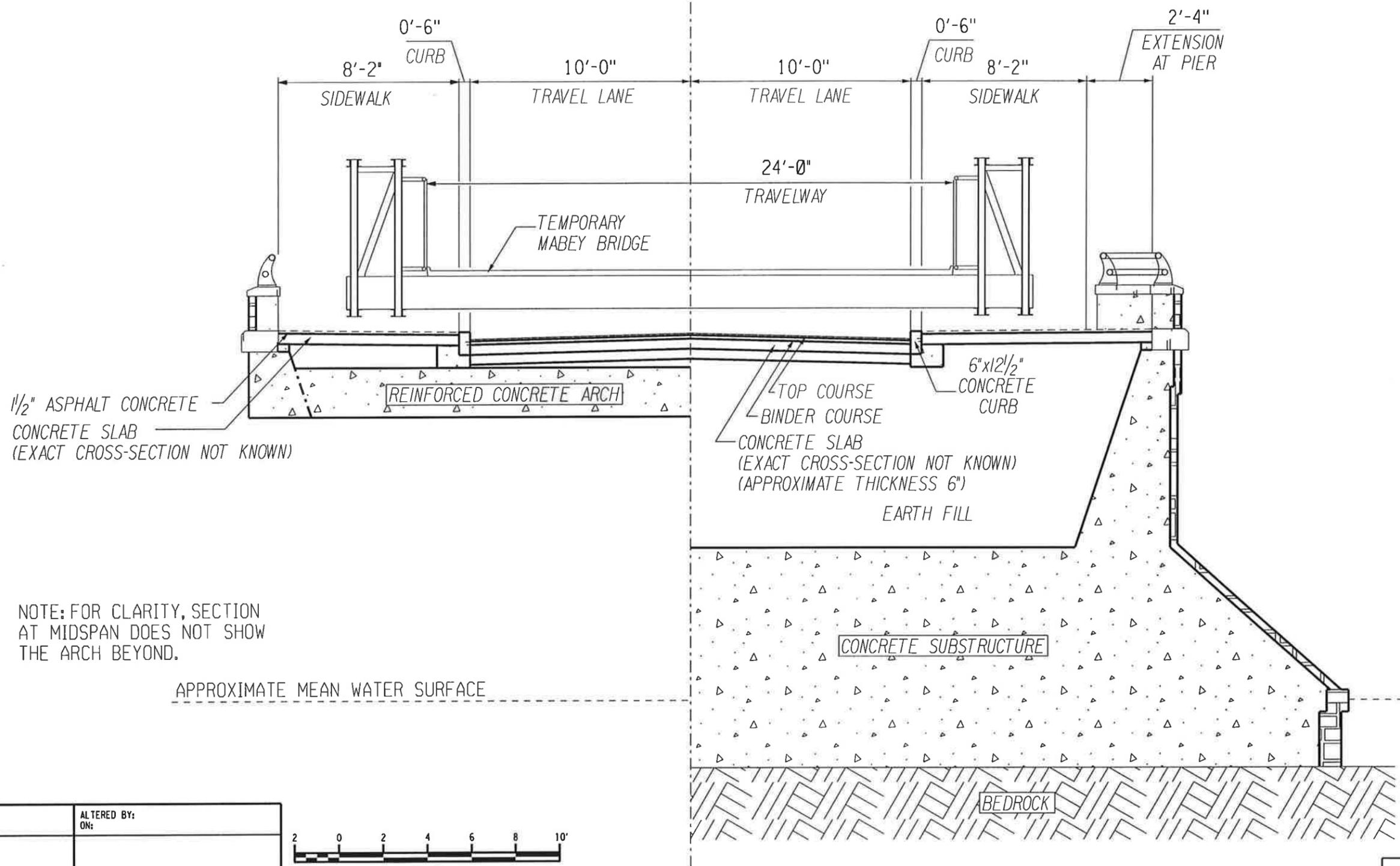
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PROJECT MANAGER I. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

TYPICAL SECTION  
 CENTER OF ARCH

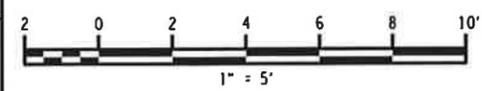
TYPICAL SECTION  
 CENTER LINE OF PIER



1/2" ASPHALT CONCRETE  
 CONCRETE SLAB  
 (EXACT CROSS-SECTION NOT KNOWN)

NOTE: FOR CLARITY, SECTION  
 AT MIDSPAN DOES NOT SHOW  
 THE ARCH BEYOND.

APPROXIMATE MEAN WATER SURFACE



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					EXISTING TYPICAL SECTION	
	COUNTY: NIAGARA					DRAWING NO. A-4 SHEET NO. 1

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION  
 SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER T. WOODBURY

CHECK

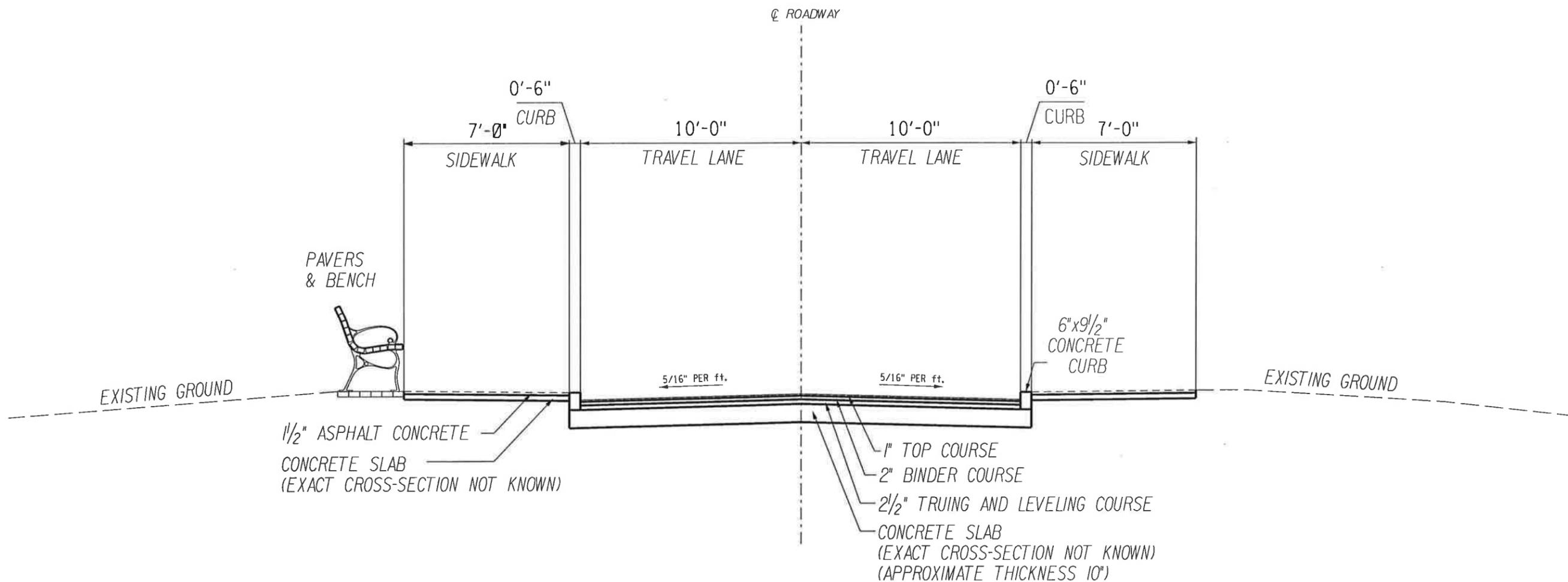
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CHECK

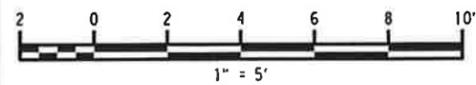
DESIGN B. CARLSON

JOB MANAGER

DESIGN SUPERVISOR



TYPICAL ROADWAY SECTION  
(GREEN ISLAND)



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					EXISTING ROADWAY SECTION	
	COUNTY: NIAGARA					DRAWING NO. A-4 SHEET NO. 2

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERING & CONSTRUCTION  
SERVICES  
BUFFALO, NEW YORK 14225

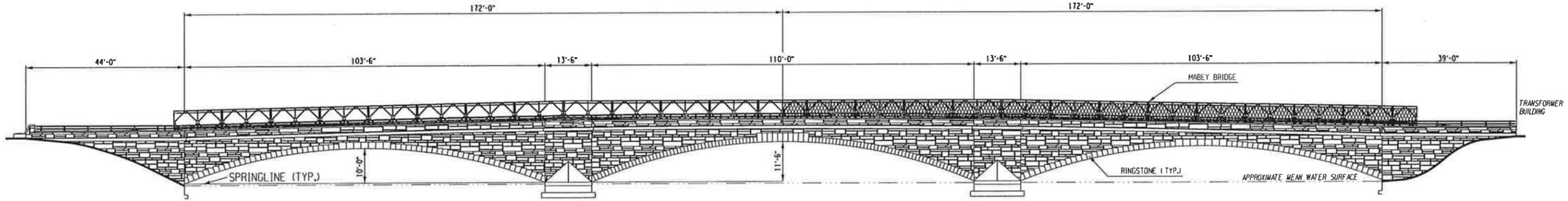
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

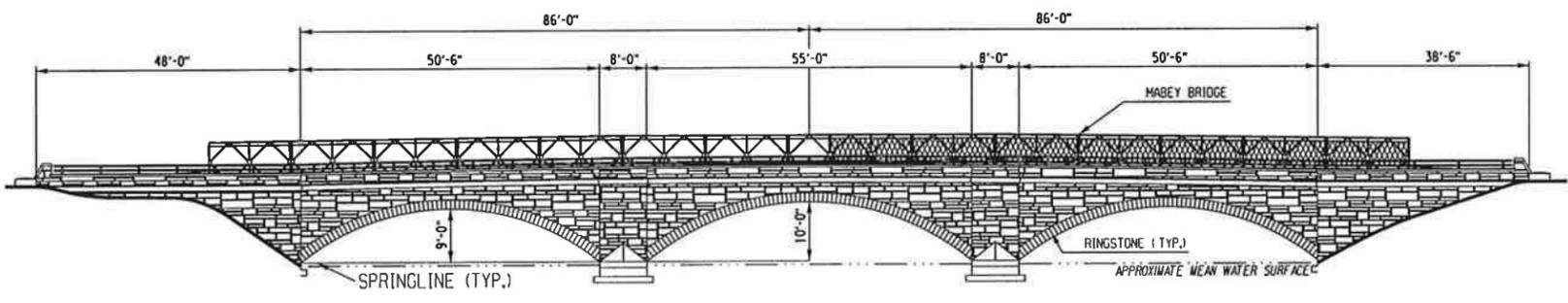
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 USER : 581153 PM

PROJECT MANAGER: T. WOODBURY  
 CHECK: A. BALANEVSKIY  
 DRAFTING: A. BALANEVSKIY  
 CHECK: B. CARLSON  
 DESIGN: B. CARLSON  
 JOB MANAGER: B. CARLSON  
 DESIGN SUPERVISOR: B. CARLSON



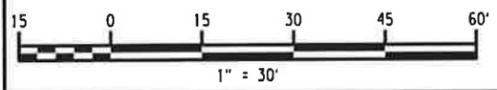
MAINLAND NIAGARA FALLS TO GREEN ISLAND BRIDGE ELEVATION  
 UPSTREAM FACE



GREEN ISLAND TO GOAT ISLAND BRIDGE ELEVATION  
 UPSTREAM FACE

NOTES:  
 LIGHTING NOT SHOWN FOR VISUAL CLARITY  
 FENCING NOT SHOWN FOR VISUAL CLARITY  
 FENCING SHOWN NOT TO SCALE FOR VISUAL CLARITY  
 ARCH DIMENSIONS SHOWN ARE FACE TO FACE

AFFIX SEAL: ON:	ALTERED BY: ON:



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					EXISTING BRIDGE ELEVATION	
	COUNTY: NIAGARA					DRAWING NO. A-5 SHEET NO. 1

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 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD	DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"	

PB 0+00  
 OFFSET 5.0'  
 NR 2+88  
 SR 3+29

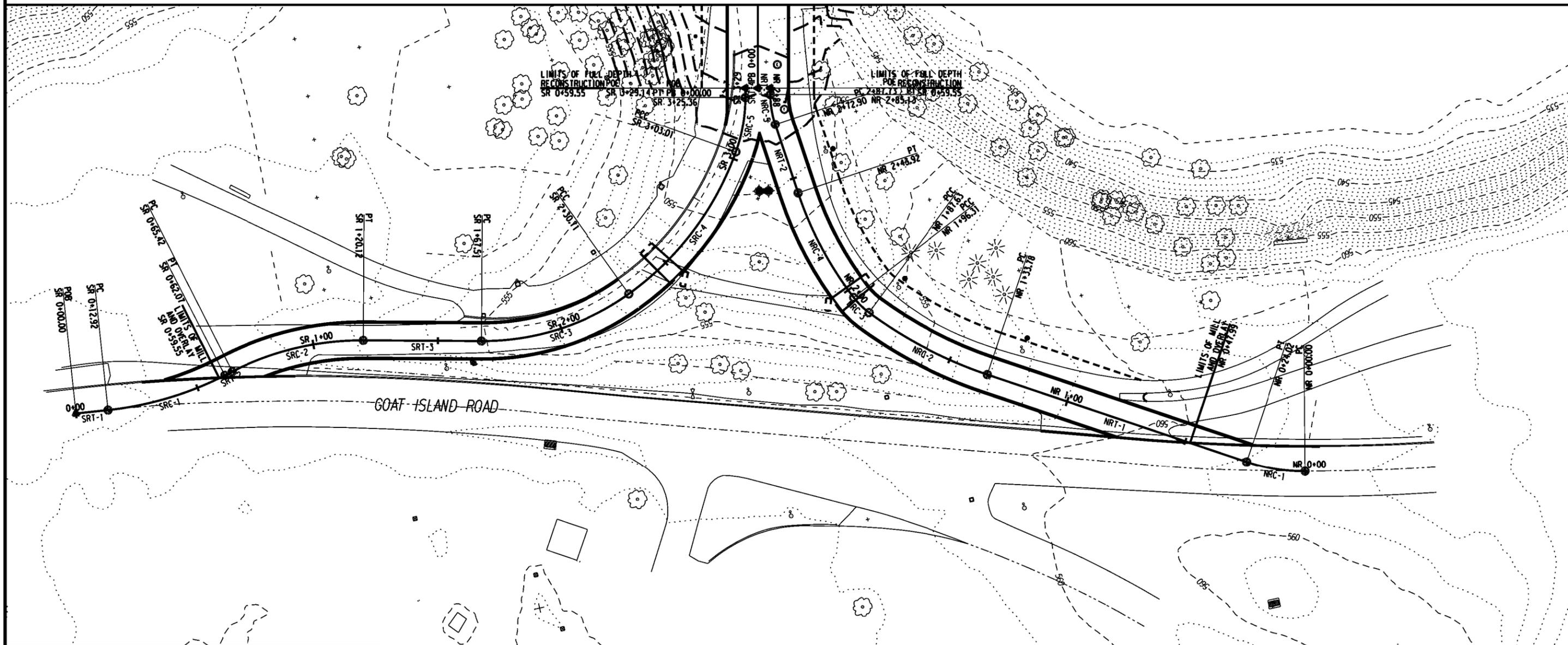
GRID NORTH



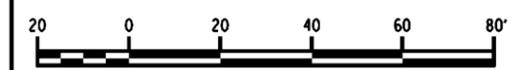
PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

MATCHLINE SEE SHEET TWO

MATCHLINE SEE SHEET TWO



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
--------------------------	--------------------------



AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- PRECAST CONCRETE ARCH



CONTRACT NUMBER  
 DRAWING NO. A-6  
 SHEET NO. 1

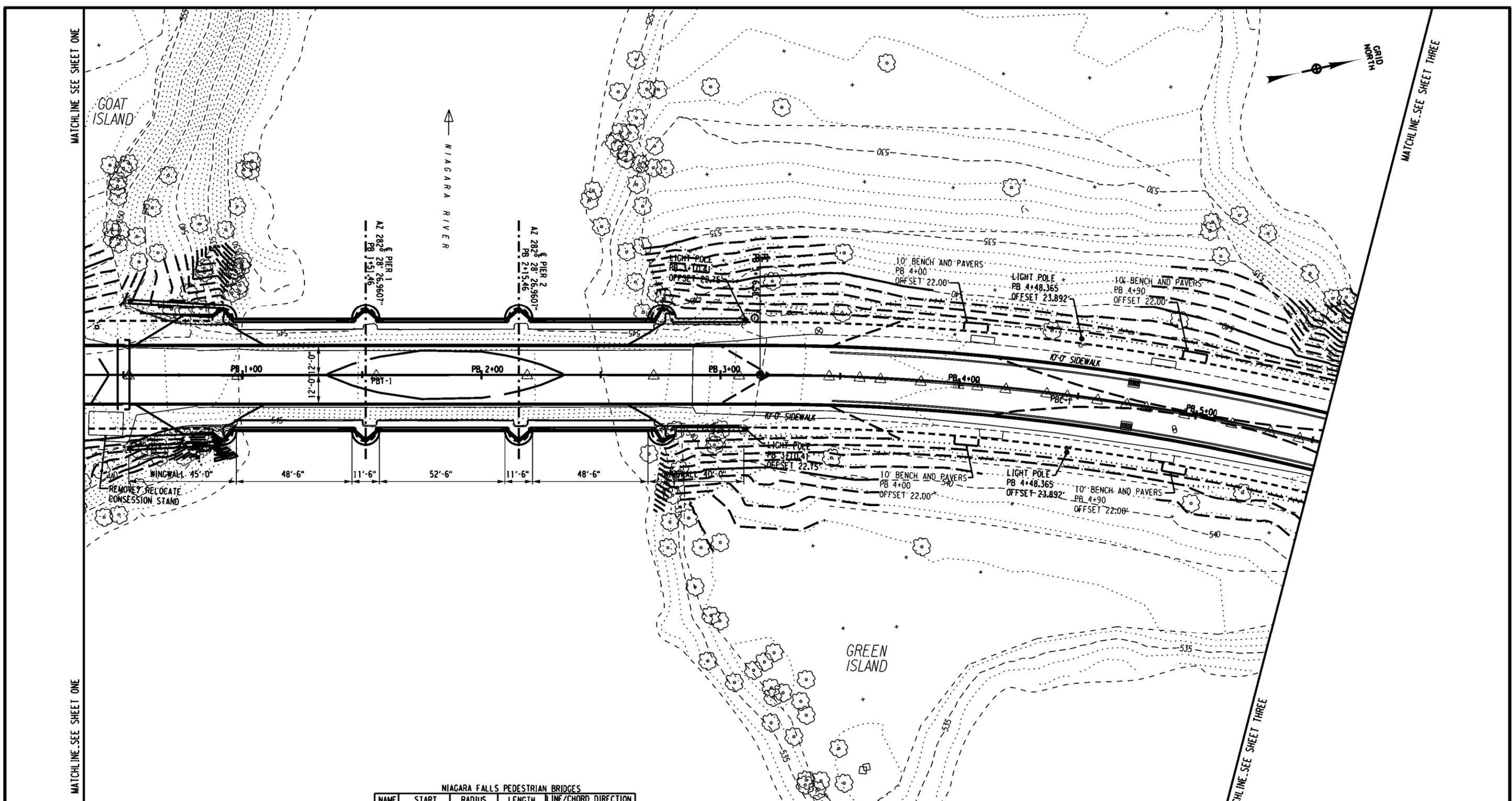
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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 DATE/TIME = 9/22/2015  
 USER = 340129 PM

FILE NAME = 576040.rpt.ddr-General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015 3:40:25 PM  
 USER = 340256 PM

PROJECT MANAGER: J. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN B. CARLSON  
 DESIGN SUPERVISOR: DESIGN B. CARLSON



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

COUNTY: NIAGARA

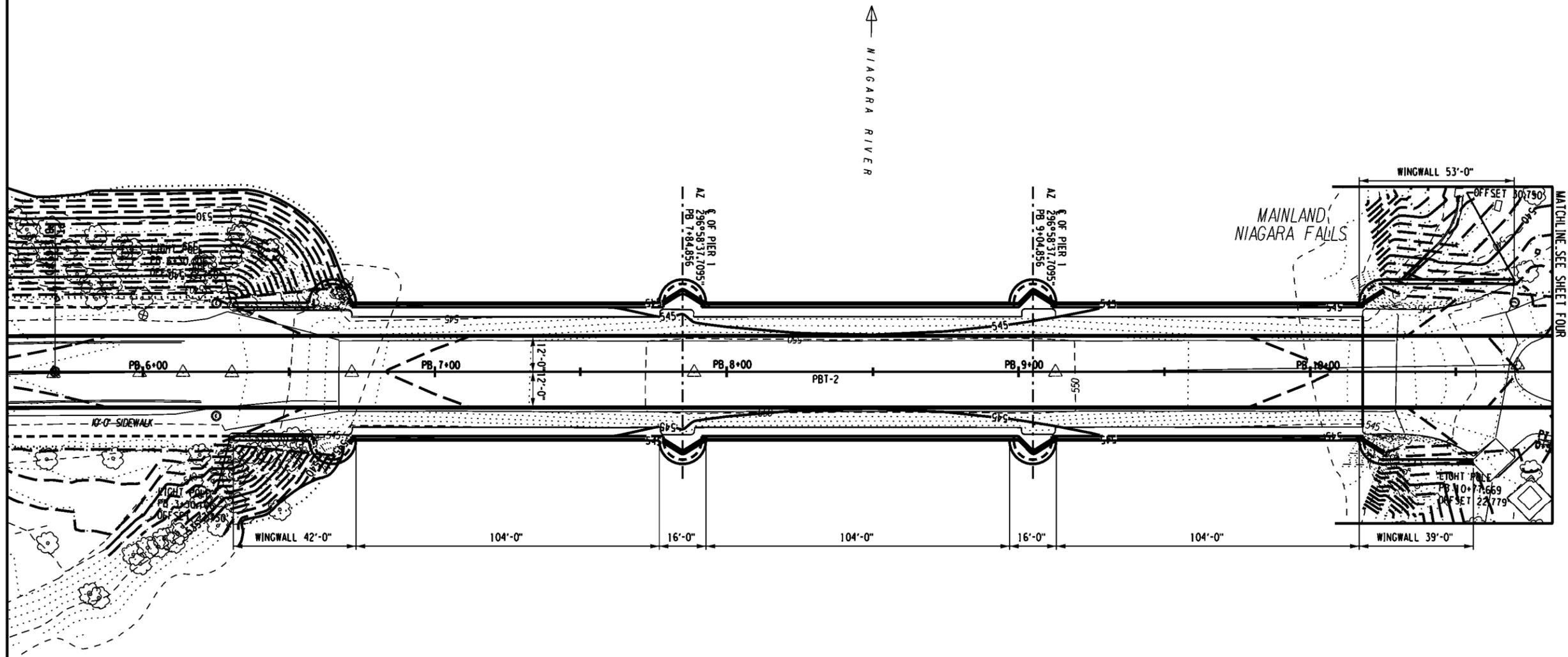
	PIN 576040	BRIDGES 5522000 552010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
				GENERAL PLAN- PRECAST CONCRETE ARCH	DRAWING NO. A-6 SHEET NO. 2
<p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p>					
<p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5        DOCUMENT NAME: DESIGN REPORT</p>					

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

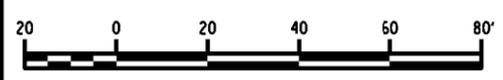
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MATCHLINE-SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"
PBT-2	PB 5+69.7	N/A	528.233'	AZ 26° 58' 37.700"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
GENERAL PLAN- PRECAST CONCRETE ARCH			DRAWING NO. A-6	
			SHEET NO. 3	

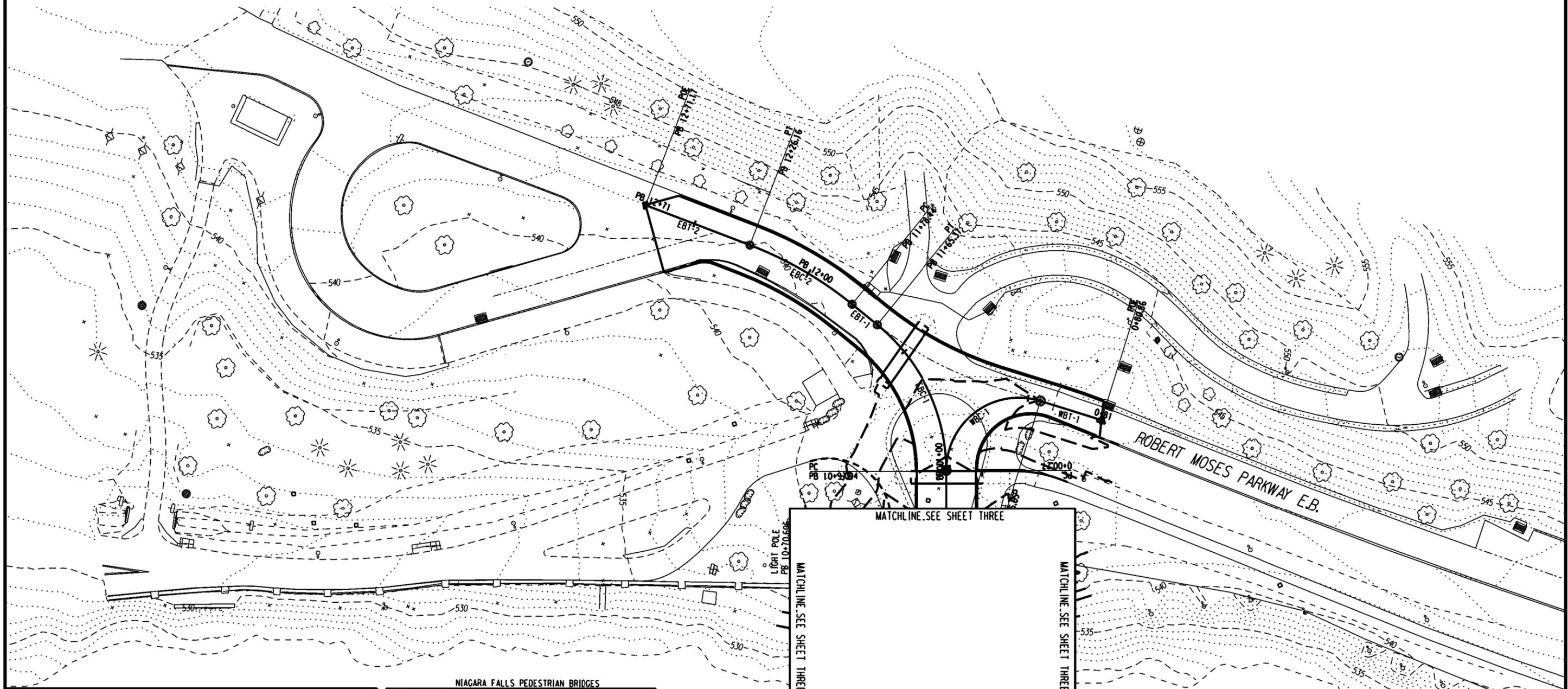
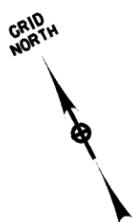
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT



FILE NAME = 576940.rpt.ddr-General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:05:03 PM

DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGNER B. CARLSON  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-2	PB 5+69.70	N/A	528.233'	AZ 26° 58' 37.700"



AFFIX SEAL: ON: \_\_\_\_\_

ALTERED BY: ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

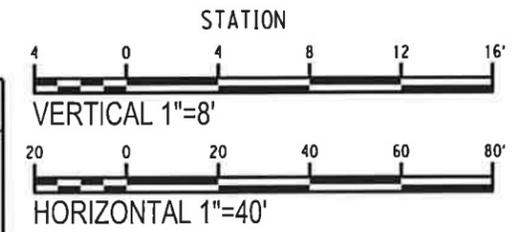
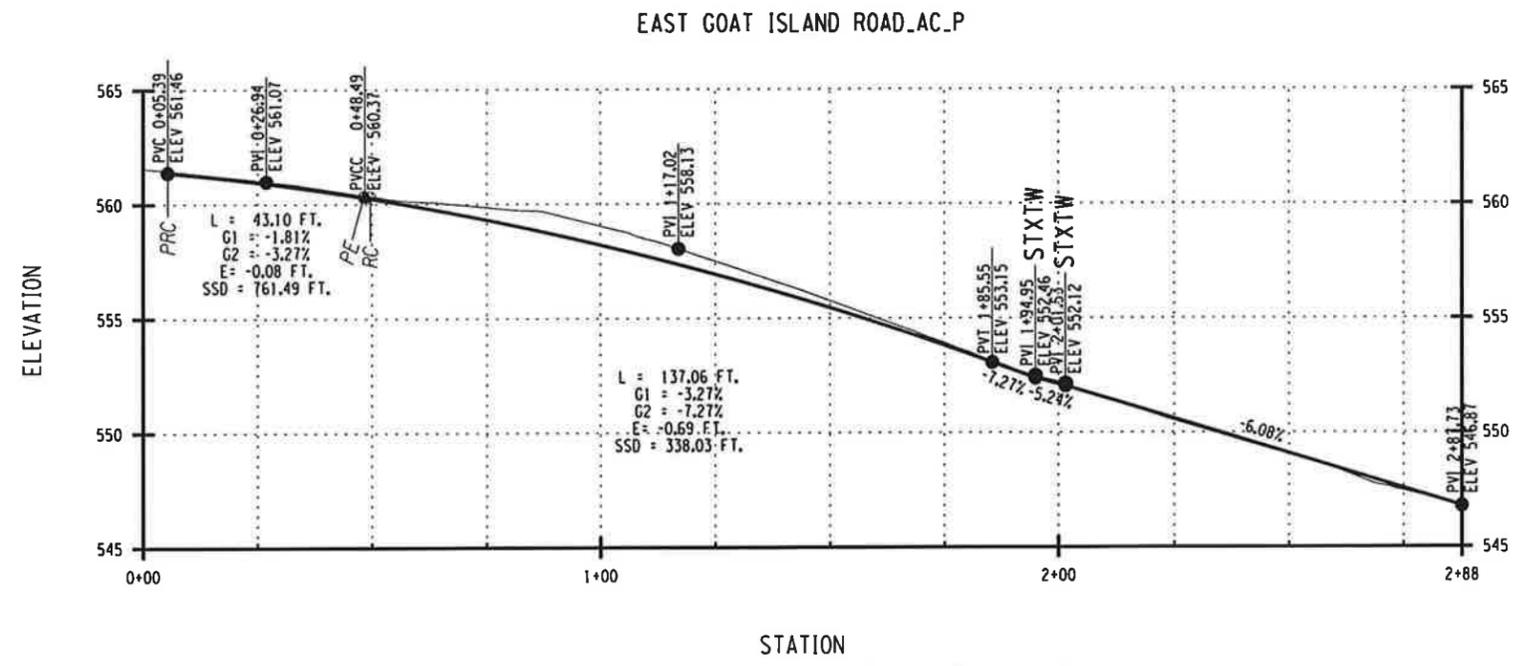
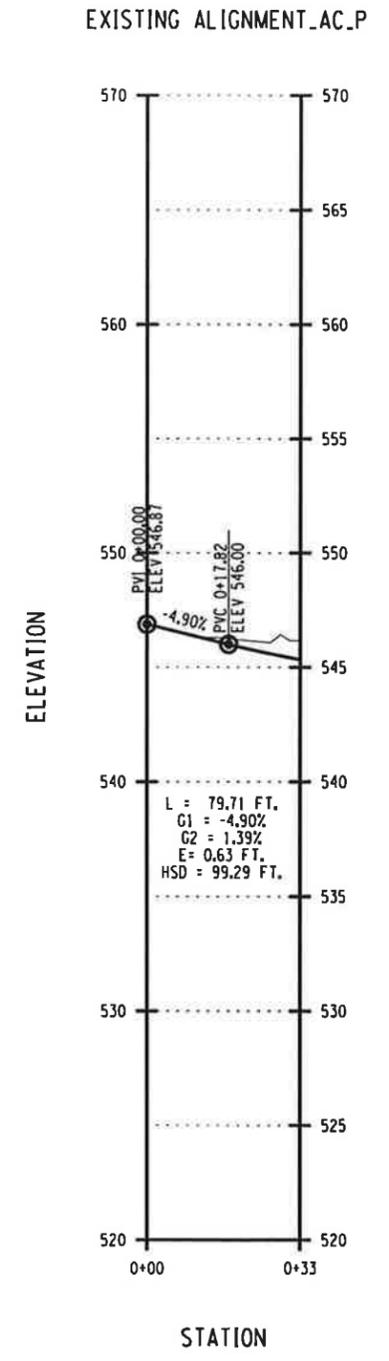
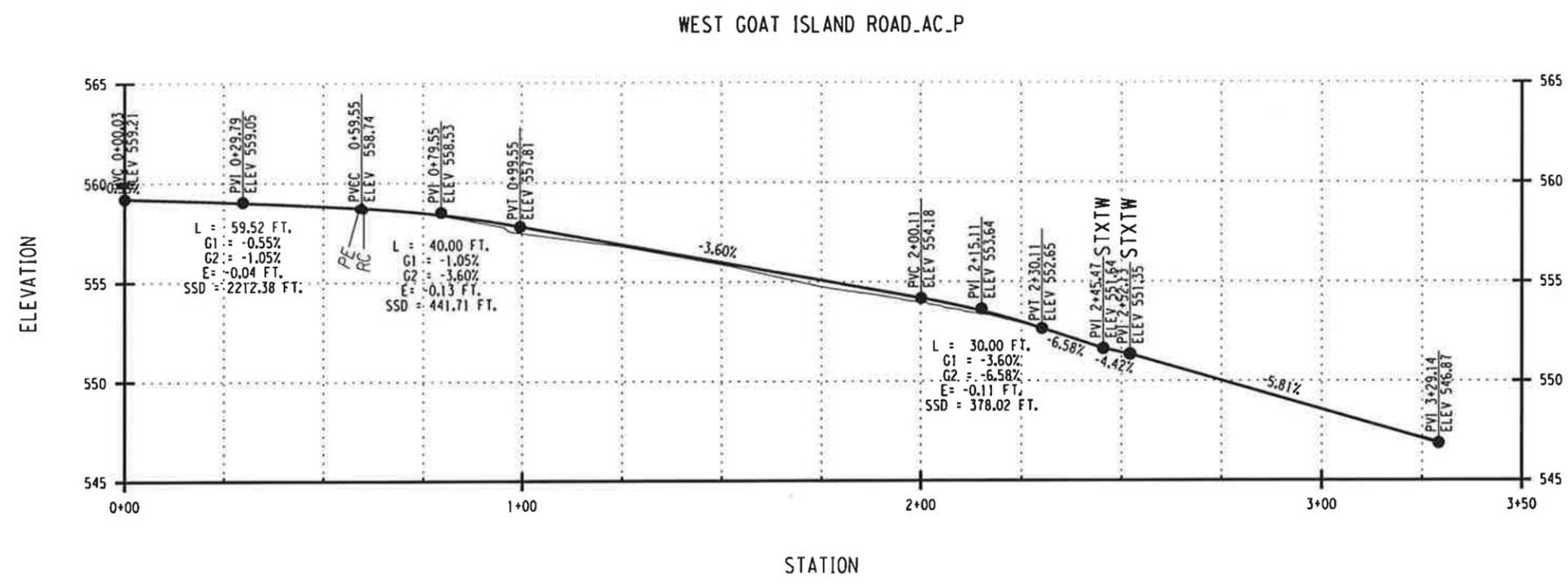
PIN	BRIDGES 5522000 5522010	CULVERTS NONE
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ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
GENERAL PLAN - PRECAST CONCRETE ARCH	DRAWING NO. A-6
	SHEET NO. 4

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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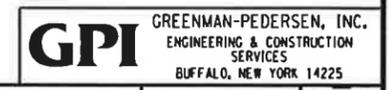
NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - PRECAST CONCRETE ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-6
						SHEET NO. 5

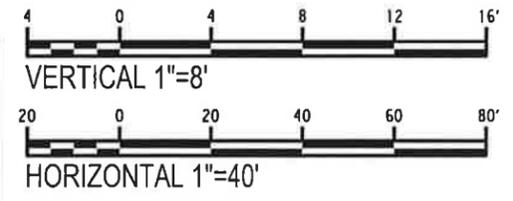
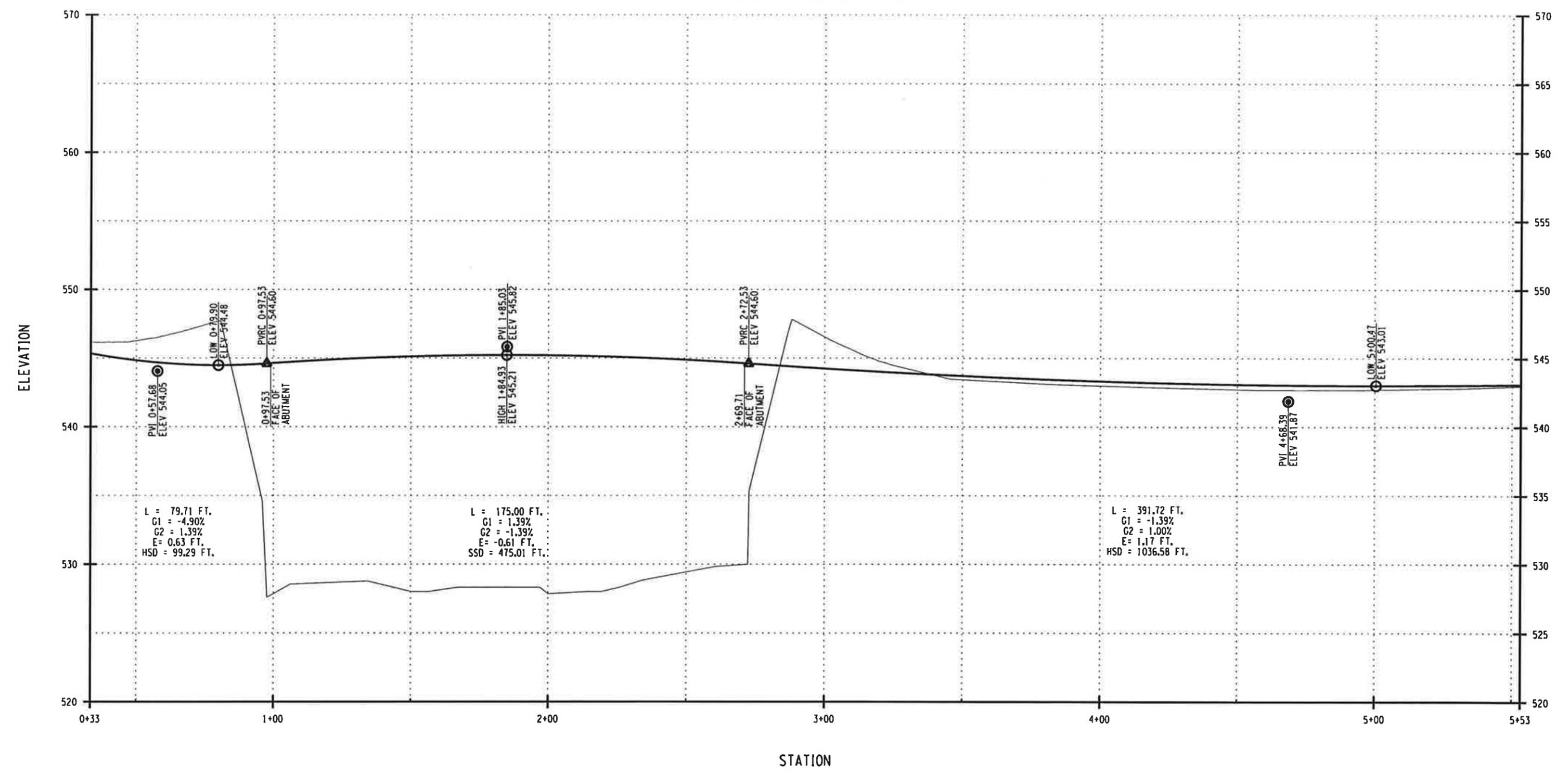
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR

EXISTING ALIGNMENT .AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - PRECAST CONCRETE ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-6
						SHEET NO. 6



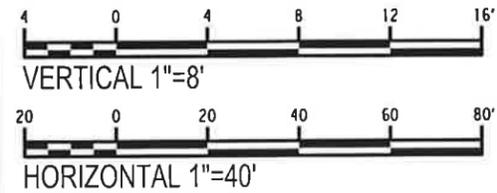
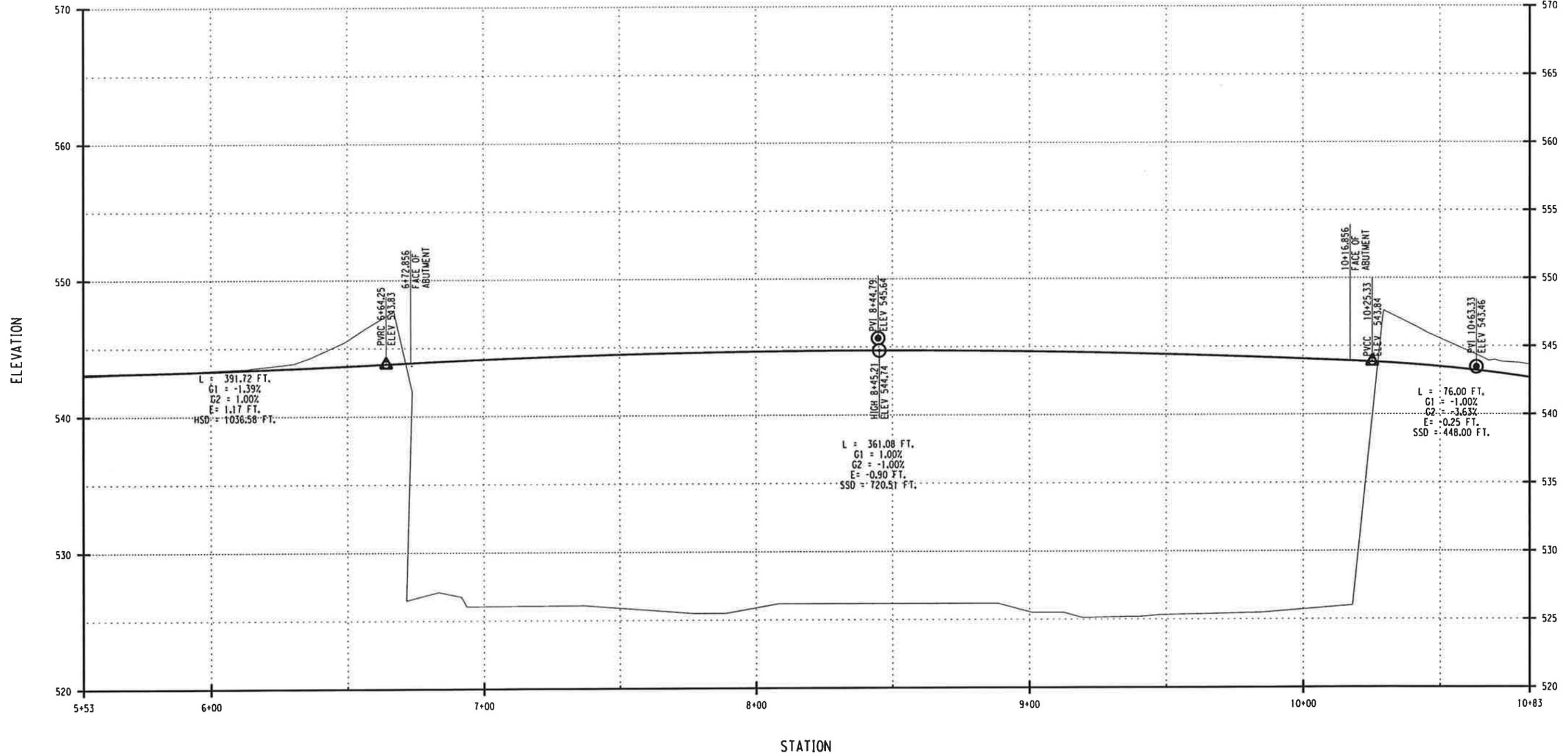
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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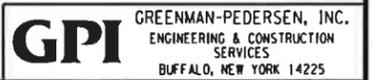
PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

EXISTING ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - PRECAST CONCRETE ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-6
						SHEET NO. 7

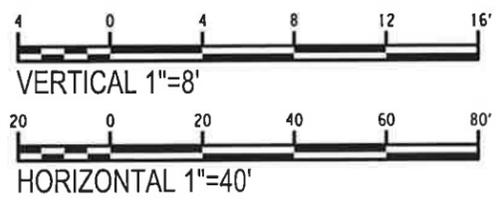
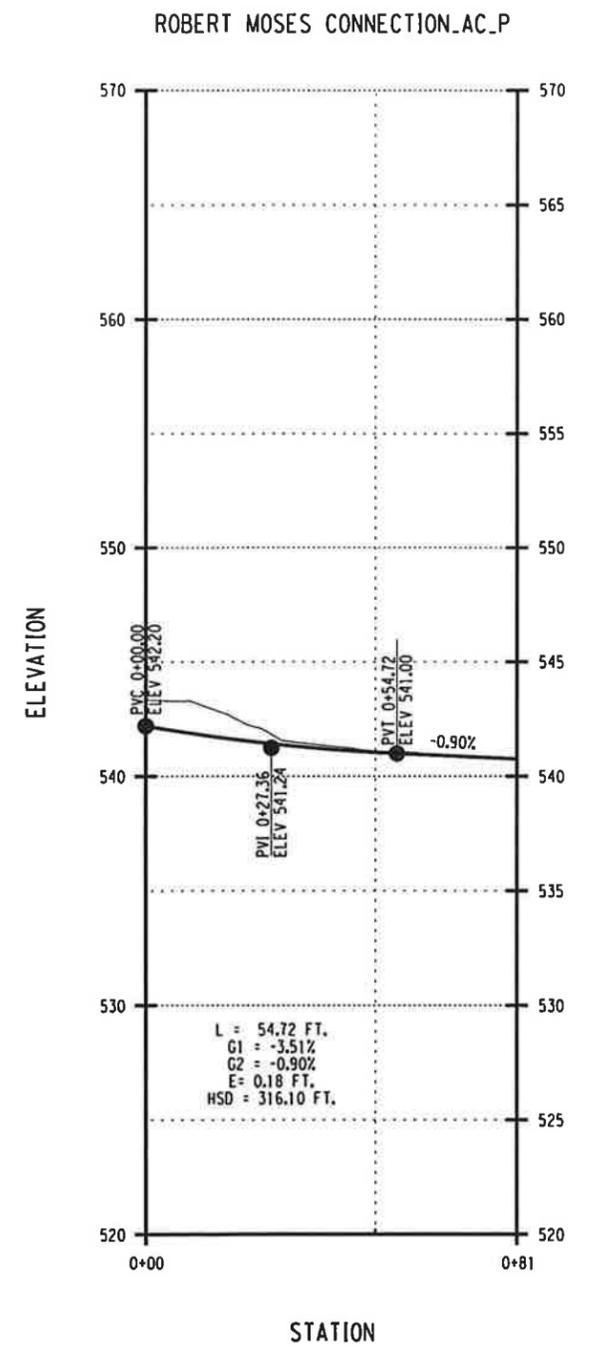
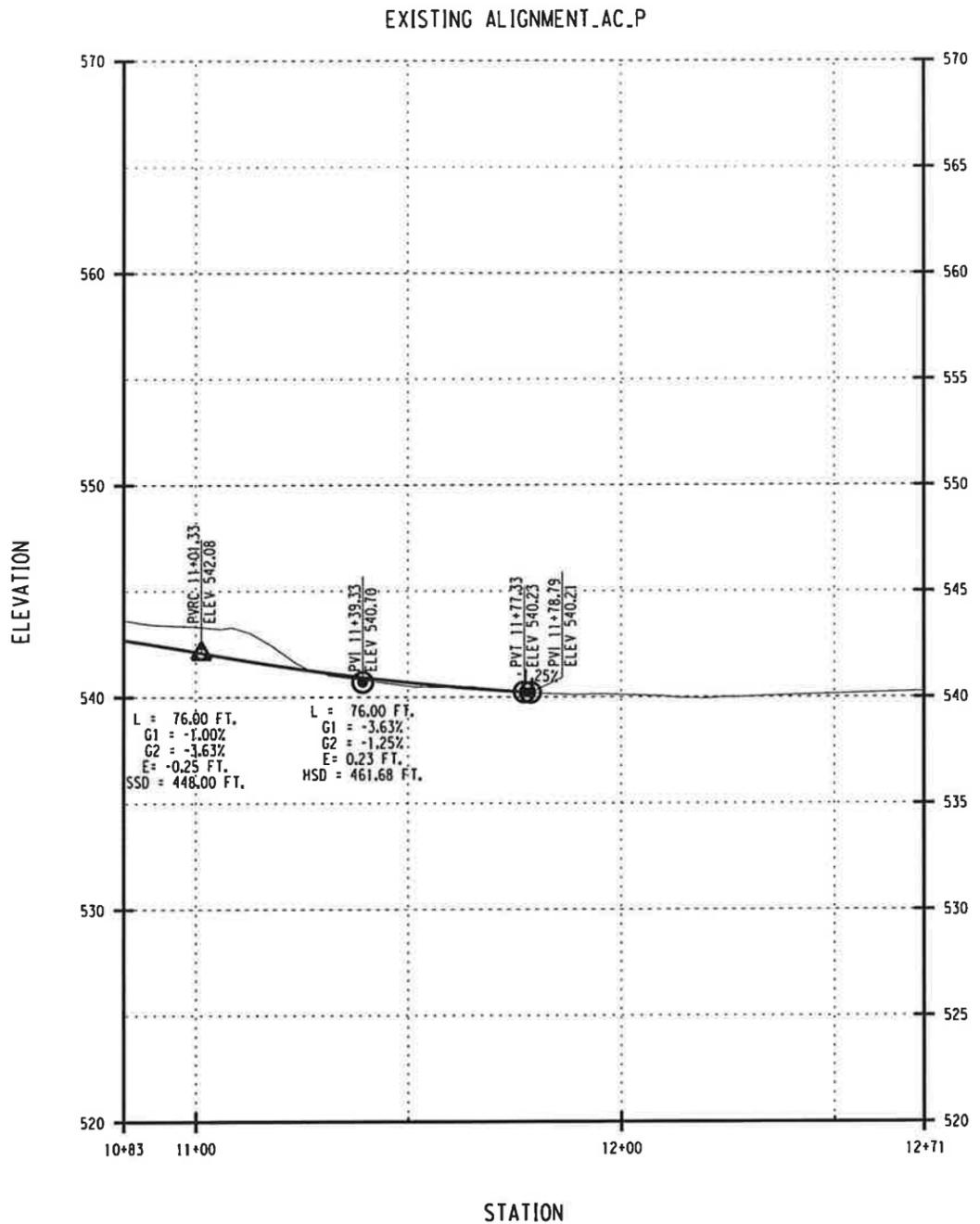


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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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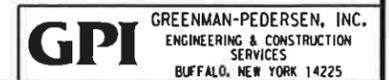
PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 576040
	BRIDGES 5522000 5522010
	CULVERTS NONE
	COUNTY: NIAGARA

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
PROFILE - PRECAST CONCRETE ARCH	DRAWING NO. A-6
	SHEET NO. 8



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

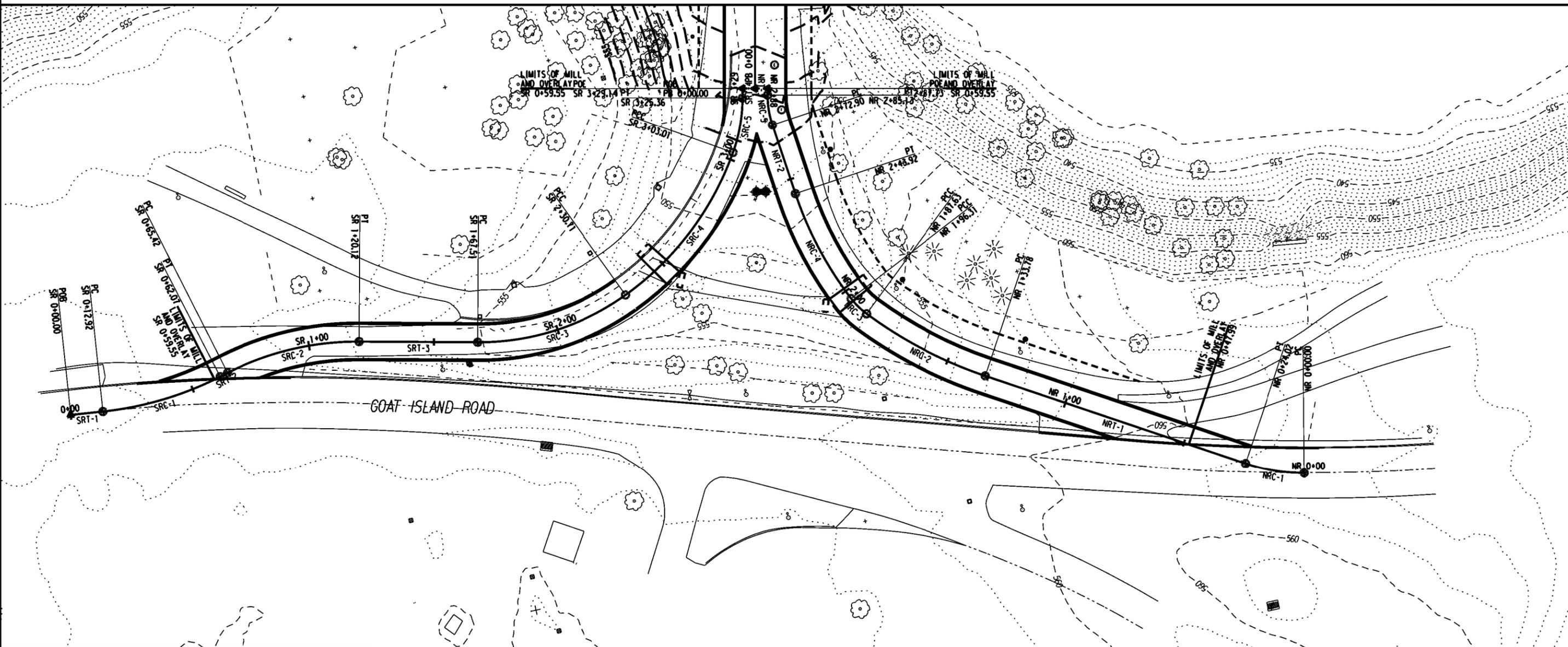
PB 0+00  
 OFFSET 5.0'  
 NR 2+88  
 SR 3+29

GRID NORTH



MATCHLINE SEE SHEET TWO

MATCHLINE SEE SHEET TWO



PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER DESIGN SUPERVISOR

FILE NAME = 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME = 9/22/2015  
 USER = 3:05:48 PM

AFFIX SEAL: ON: \_\_\_\_\_  
 ALTERED BY: ON: \_\_\_\_\_



AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- HAUNCHED GIRDER

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

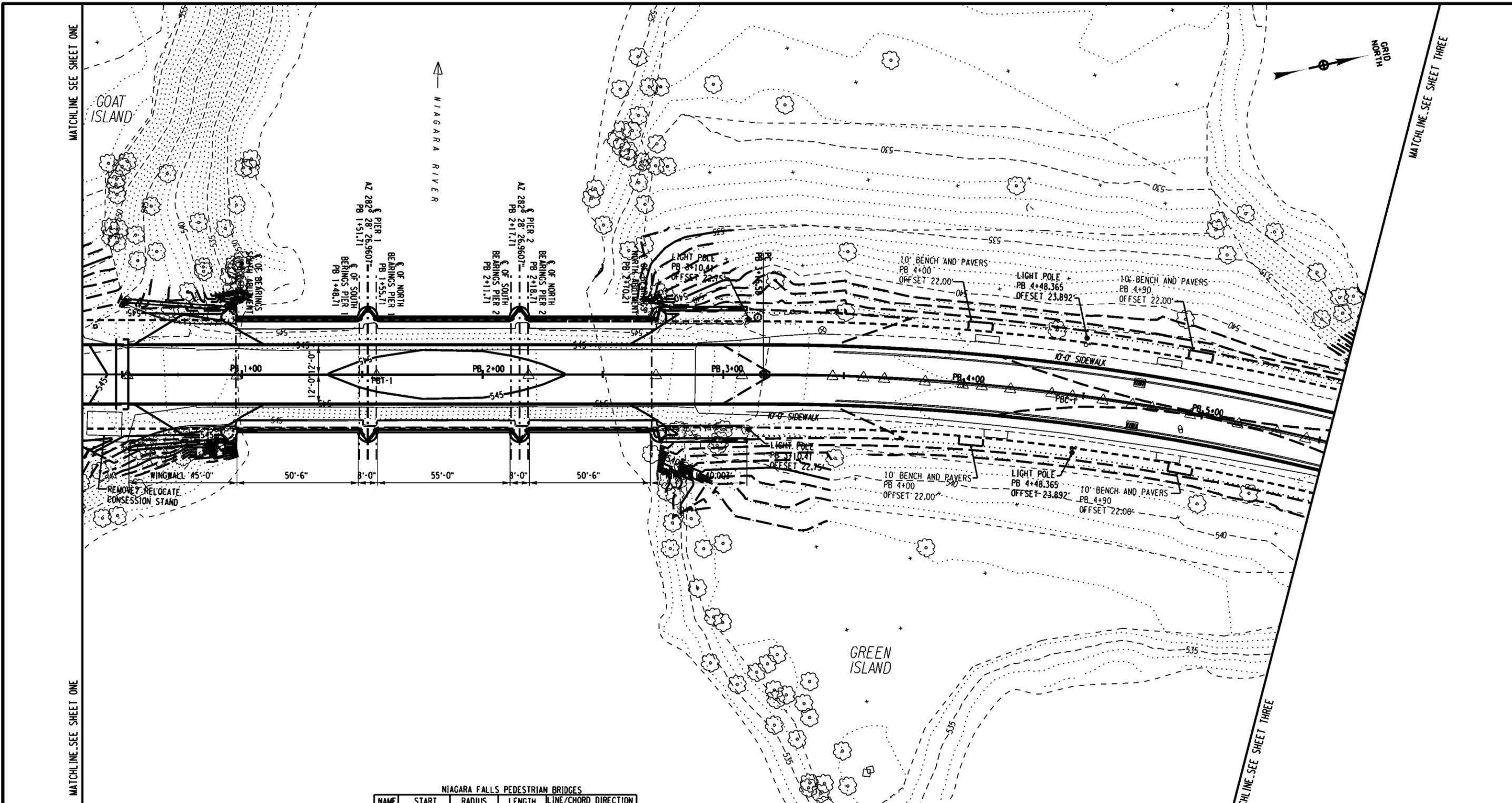
CONTRACT NUMBER \_\_\_\_\_  
 DRAWING NO. A-7  
 SHEET NO. 1

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040.rpt.ddr-General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:07:26 PM

DESIGN SUPERVISOR: DESIGN B. CARLSON  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: PROJECT MANAGER I. WOODBURY



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

COUNTY: NIAGARA

	PIN 576040	BRIDGES 5522000 552010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
				GENERAL PLAN- HAUNCHED GIRDER	
					DRAWING NO. A-7
					SHEET NO. 2

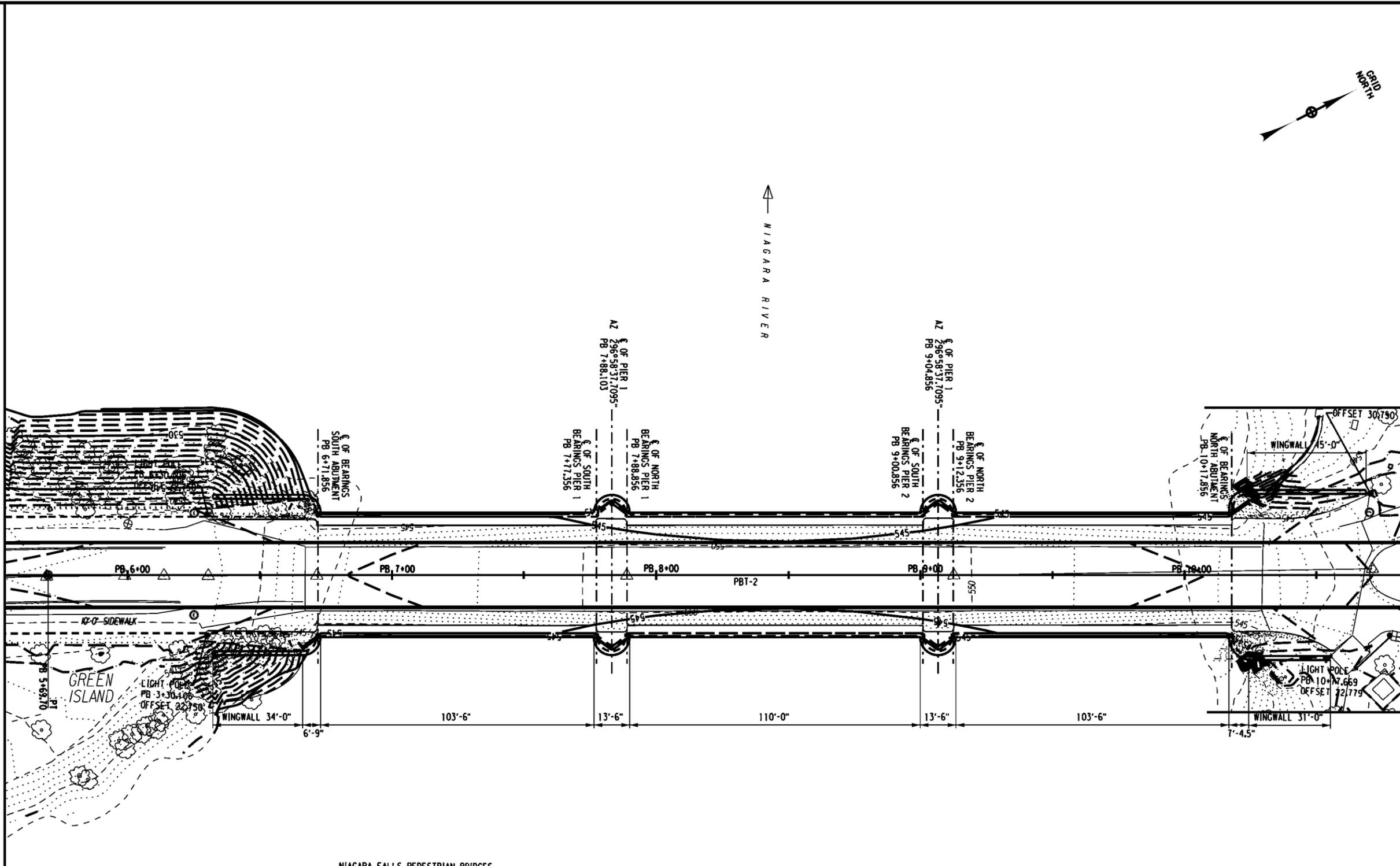
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**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

MATCHLINE-SEE SHEET TWO

MATCHLINE-SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"
PBT-2	PB 5+69.7	N/A	528.233'	AZ 269° 58' 37.700"



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					GENERAL PLAN- HAUNCHED GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-7
						SHEET NO. 3

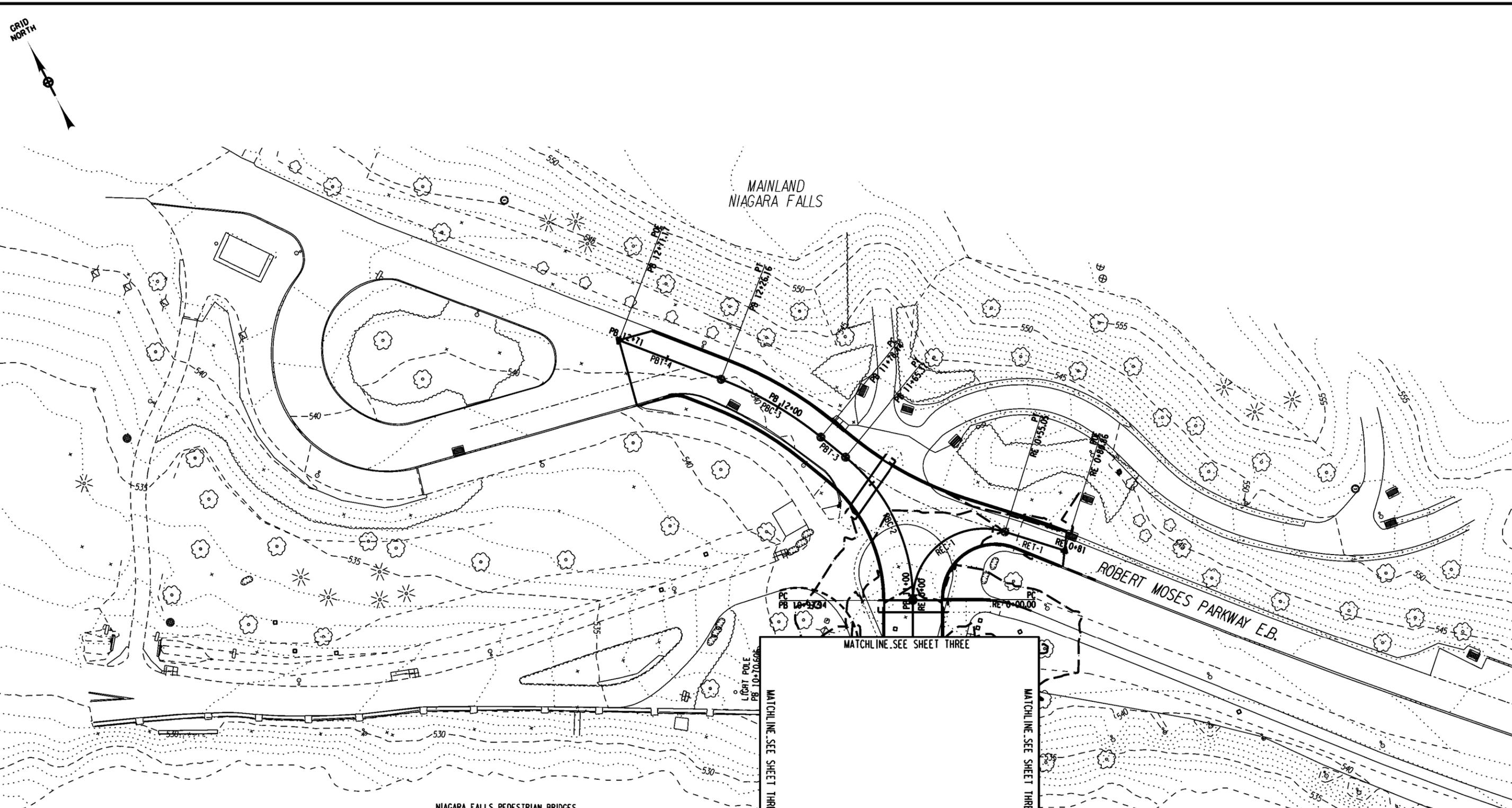
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**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME = 9/22/2015  
 USER = 31416 PM

DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGNER: B. CARLSON  
 CHECKER: A. BALANEVSKIY  
 CHECKER: PROJECT MANAGER



AFFIX SEAL: ON: \_\_\_\_\_

ALTERED BY: ON: \_\_\_\_\_

NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-2	PB 5+69.70	N/A	528.233'	AZ 26° 58' 37.700"



AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN - HAUNCHED GIRDER

CONTRACT NUMBER

DRAWING NO. A-7

SHEET NO. 4



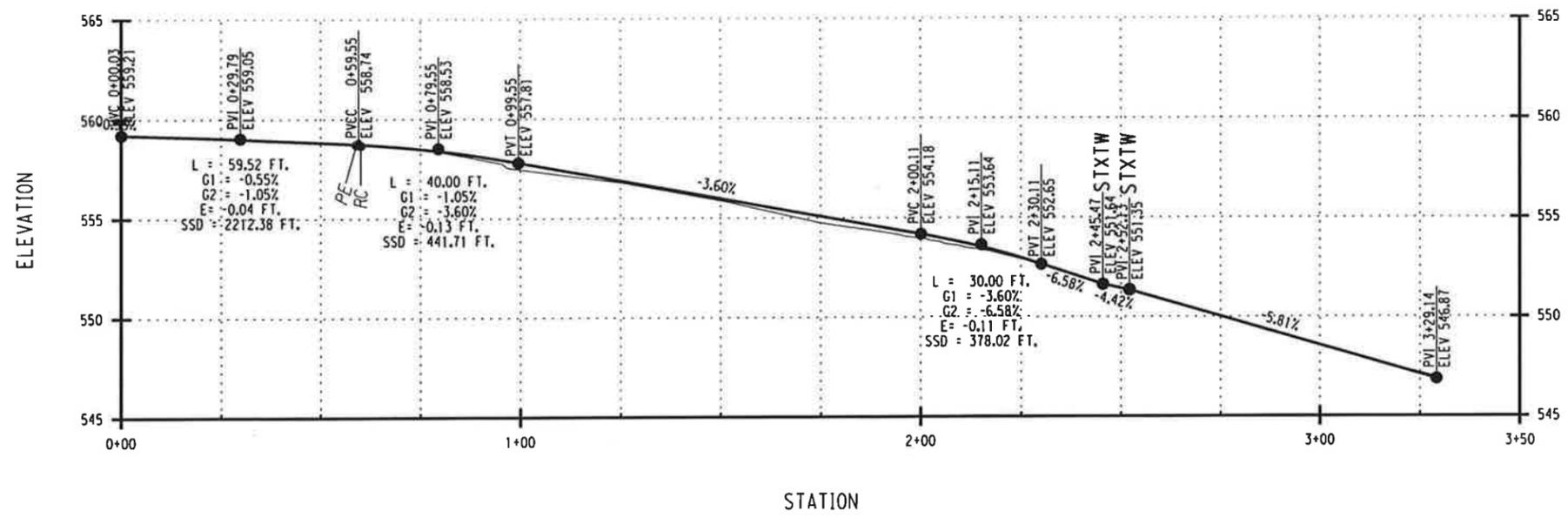
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

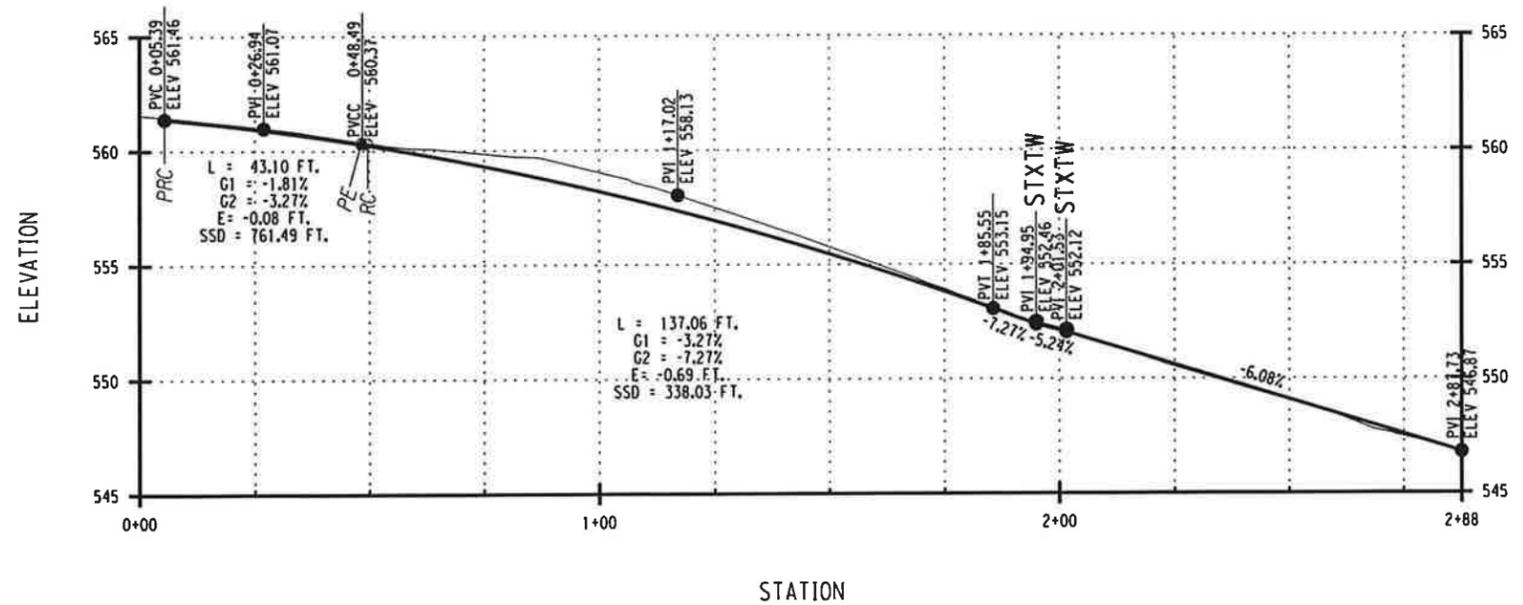
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 DATE/TIME = 4/1/2015 8:34:03 AM  
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PROJECT MANAGER: T. WOODBURY  
 CHECK: A. BALANEVSKIY  
 DRAFTING: A. BALANEVSKIY  
 CHECK: B. CARLSON  
 DESIGN: B. CARLSON  
 JOB MANAGER: B. CARLSON  
 SUPERVISOR: B. CARLSON

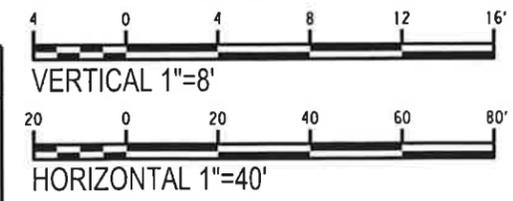
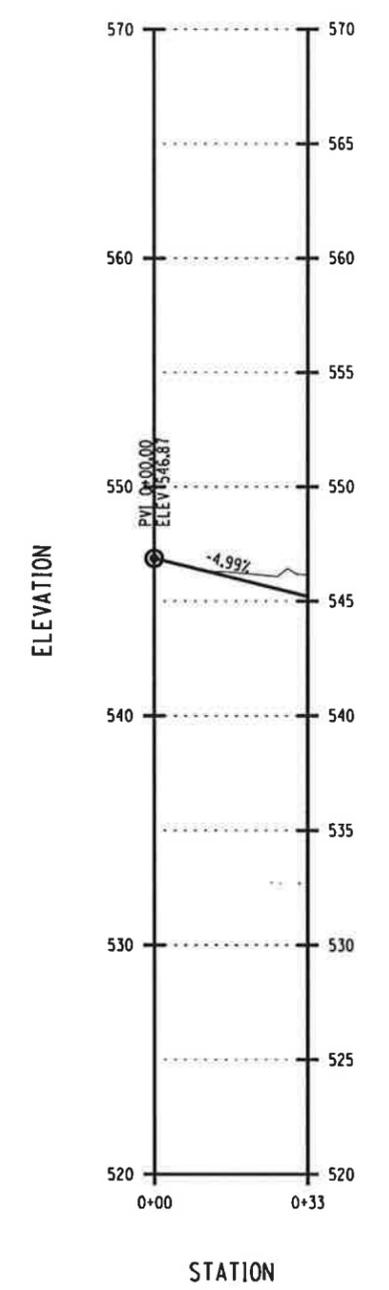
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EAST GOAT ISLAND ROAD.AC.P

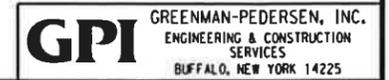


EXISTING ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - HAUCED GIRDER	DRAWING NO. A-7
					SHEET NO. 5



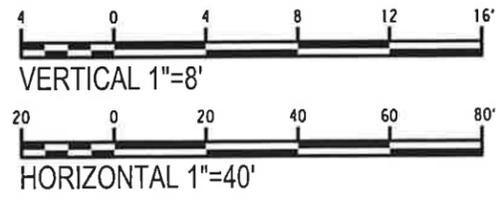
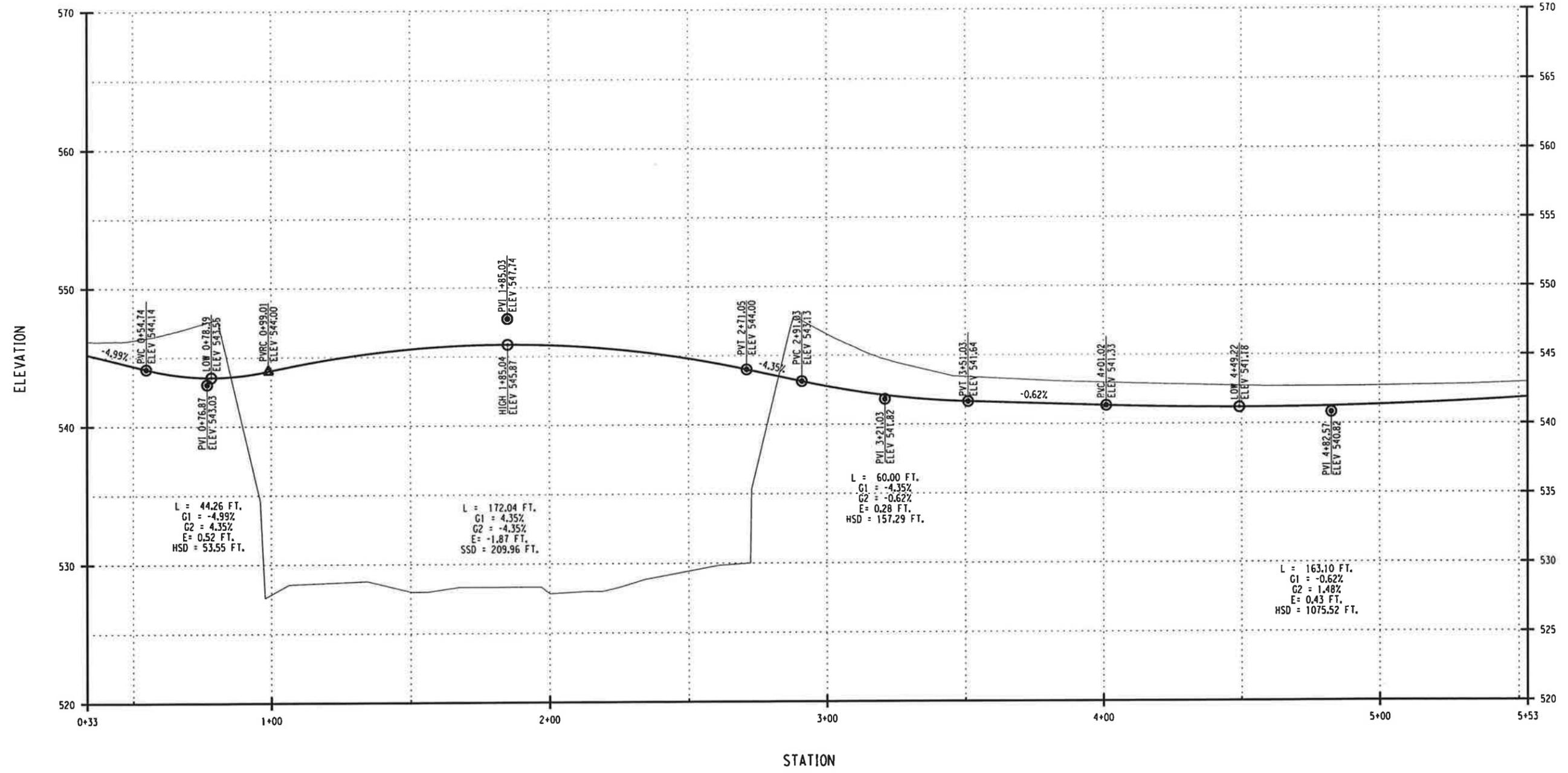
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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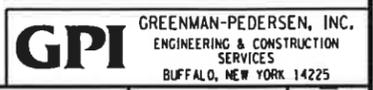
JOB MANAGER: DESIGN B. CARLSON  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: PROJECT MANAGER I. WOODBURY

EXISTING ALIGNMENT .AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

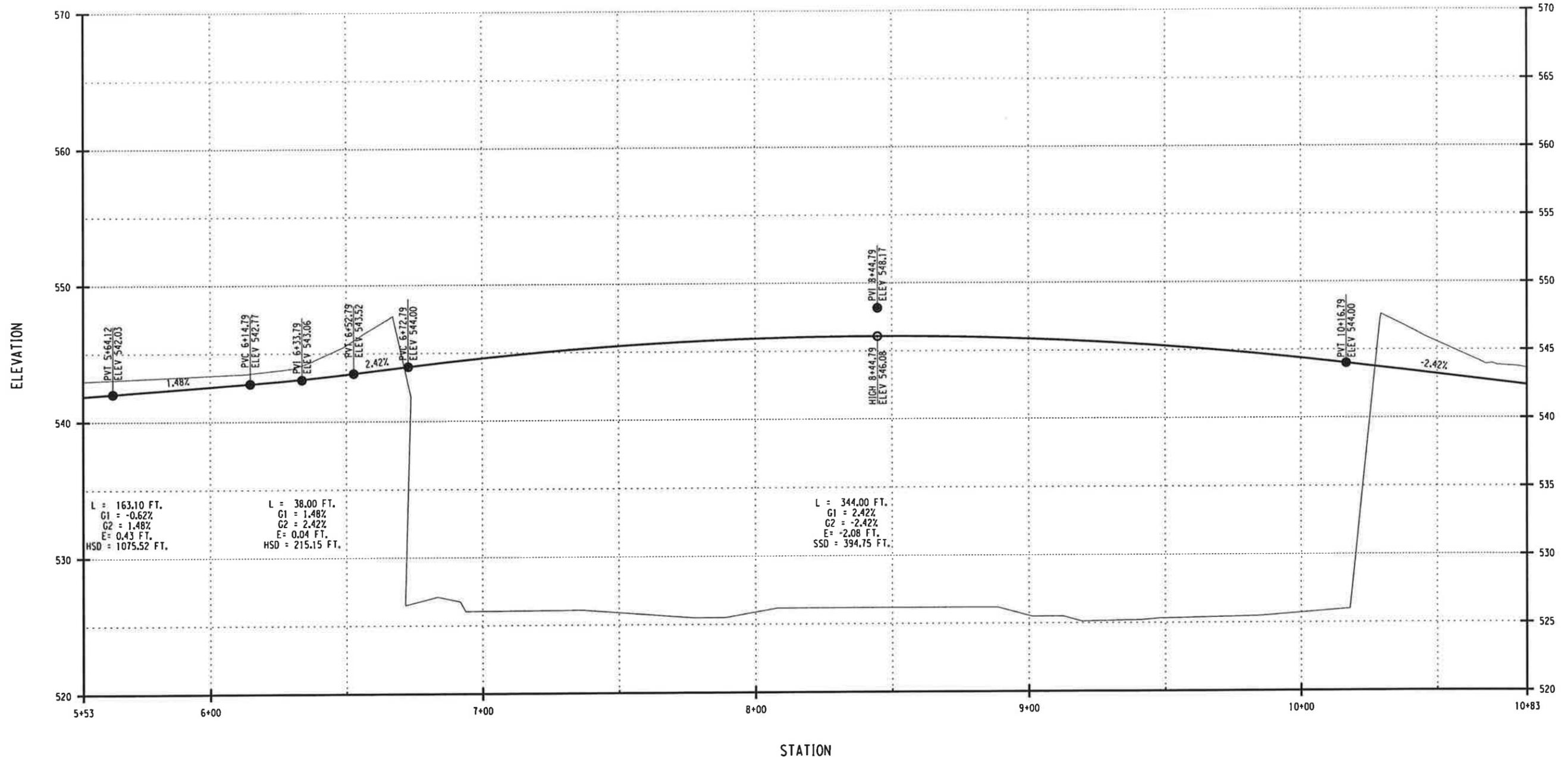
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					PROFILE - HAUNCHED GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-7
						SHEET NO. 6



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

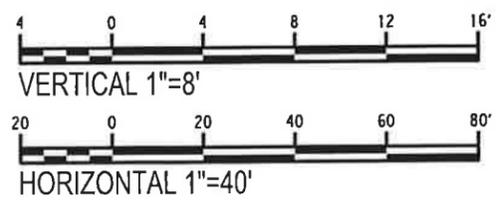
NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

EXISTING ALIGNMENT.AC.P



FILE NAME = 575940.rpt.dbr-General Plans and Profiles.dgn  
 DATE/TIME = 2/3/2015  
 USER = 246622 PM

PROJECT MANAGER: I. WOODBURY  
 CHECK: A. BALANEVSKIY  
 CHECK: B. CARLSON  
 DESIGN SUPERVISOR: B. CARLSON  
 JOB MANAGER: B. CARLSON



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - HAUNCHED GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-7
						SHEET NO. 7

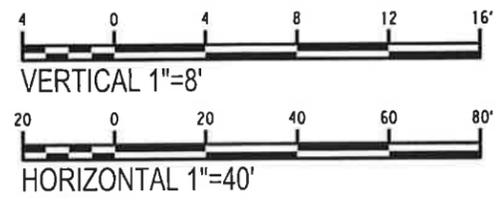
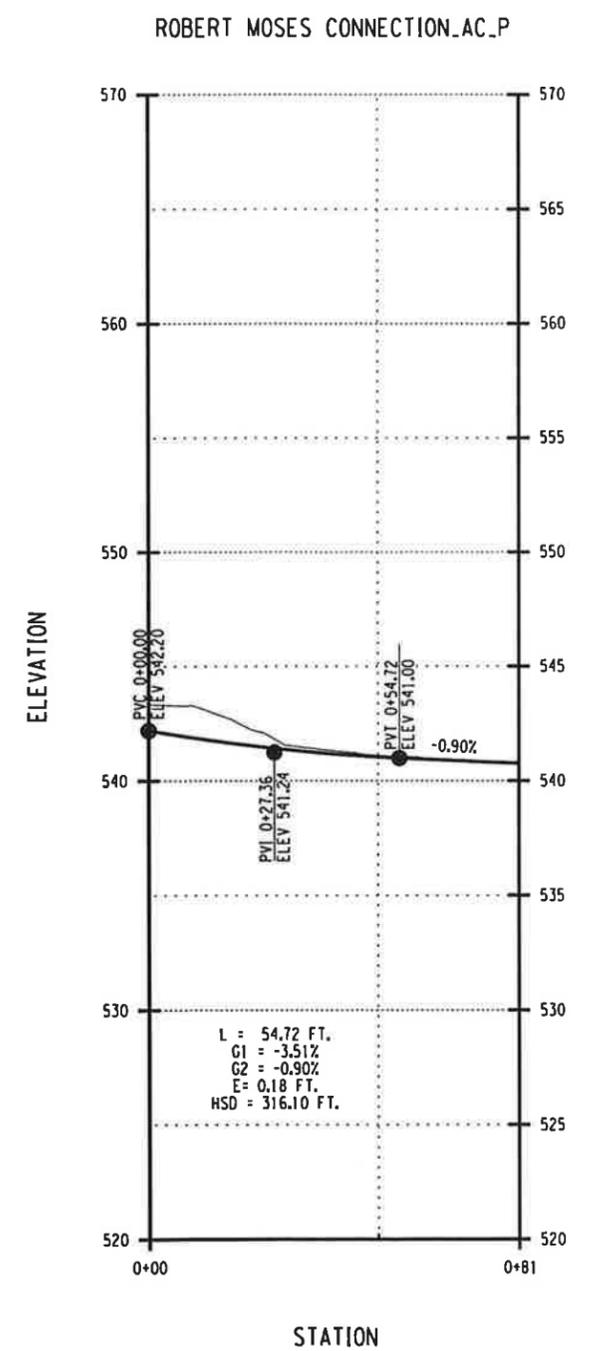
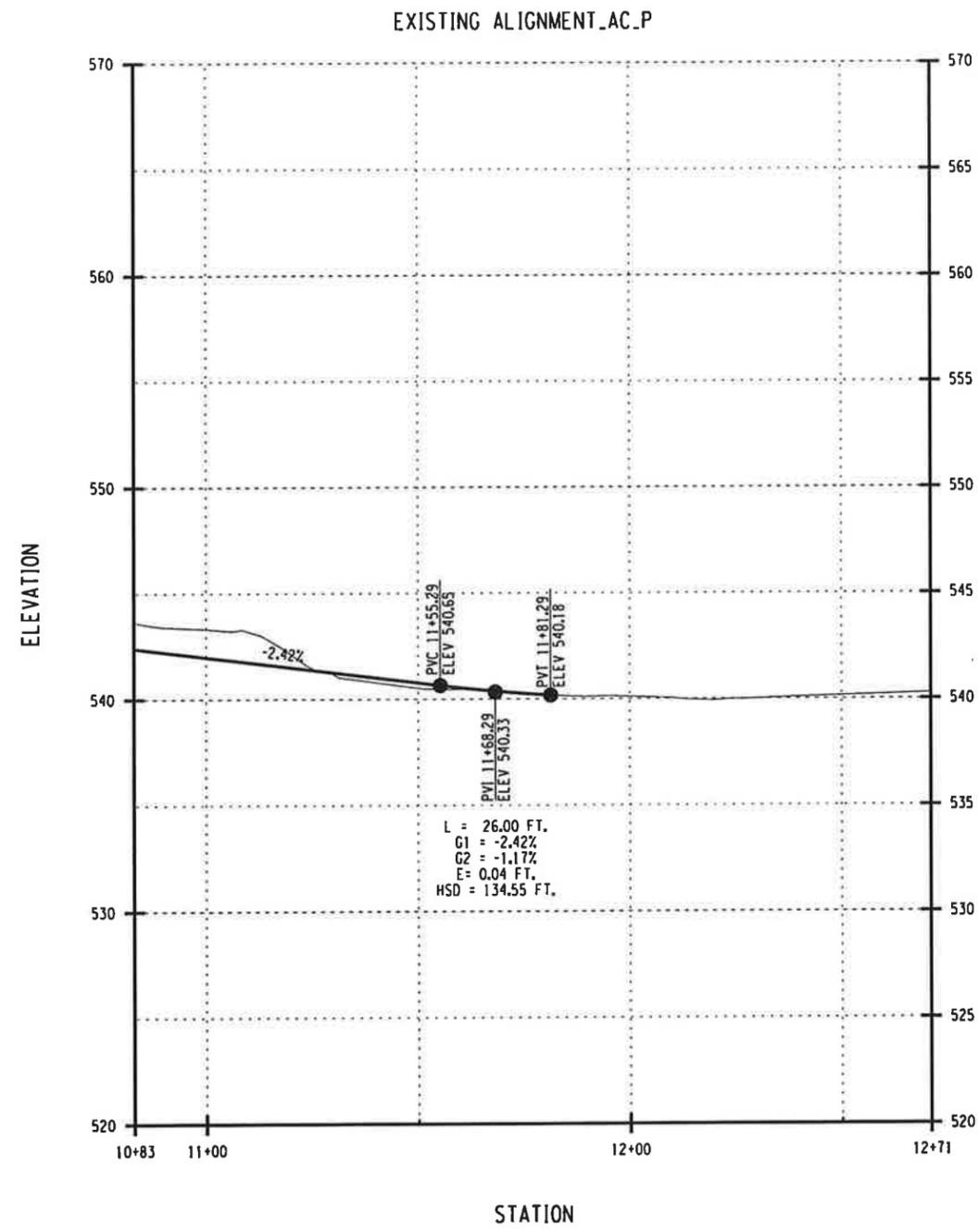


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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 DATE/TIME = 2/25/2015  
 USER = 74647 AM

DESIGN SUPERVISOR  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER I. WOODBURY



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - HAUNCHED GIRDER	
						DRAWING NO. A-7
						SHEET NO. 8

COUNTY: NIAGARA		
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

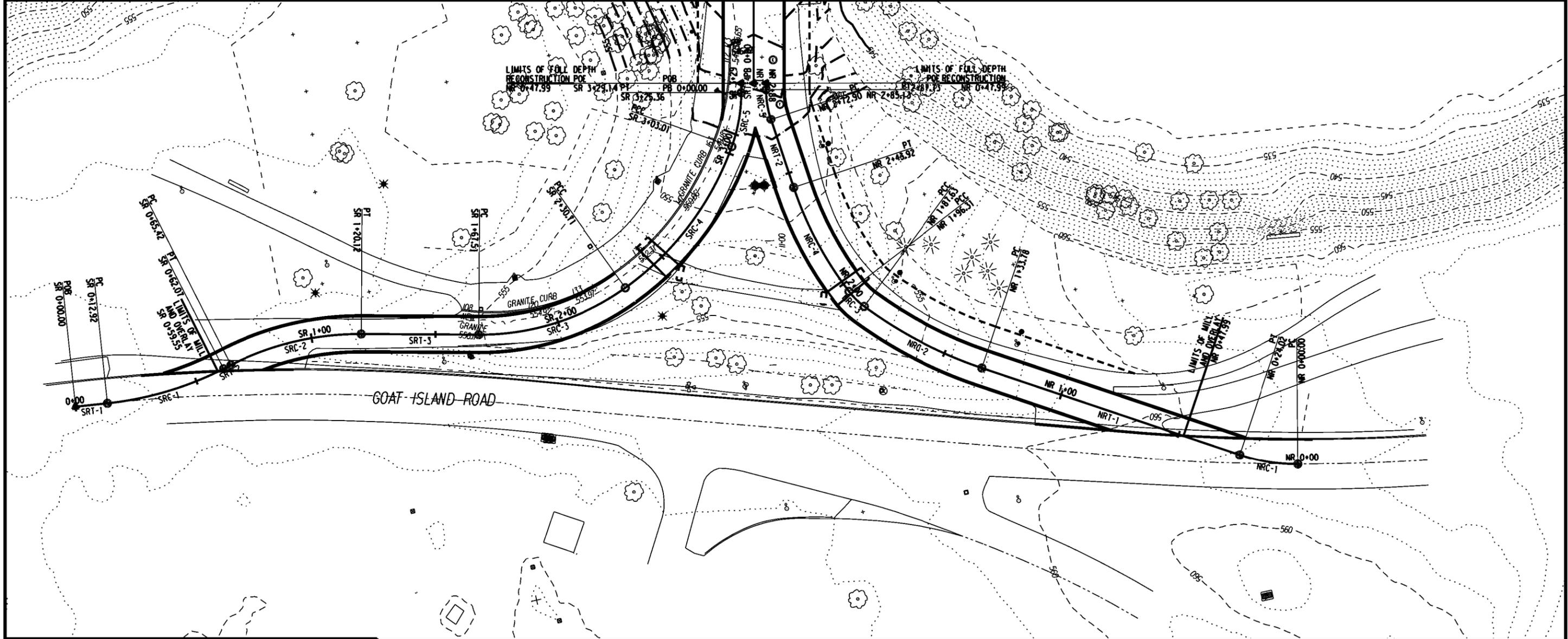
PB 0+00  
 OFFSET 5.0'  
 NR 2+88  
 SR 3+29

GRID NORTH



MATCHLINE SEE SHEET TWO

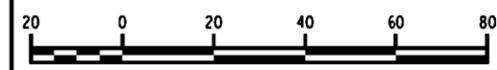
MATCHLINE SEE SHEET TWO



PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER DESIGN SUPERVISOR

FILE NAME = 576040\_rpt\_dcr\_General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:10:06 PM

AFFIX SEAL: ON: \_\_\_\_\_  
 ALTERED BY: ON: \_\_\_\_\_



AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- STEEL TIED ARCH

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

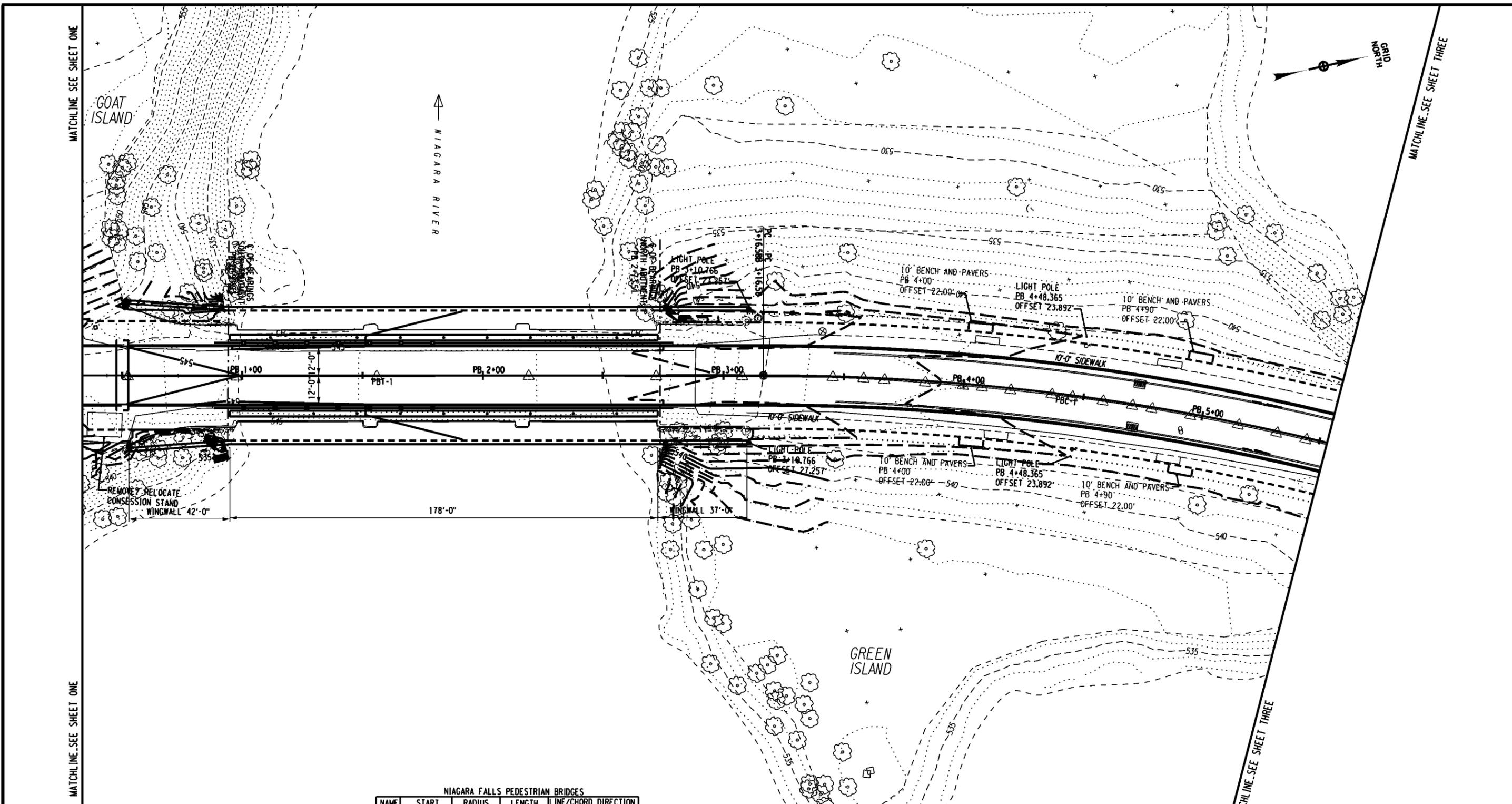
CONTRACT NUMBER \_\_\_\_\_  
 DRAWING NO. A-8  
 SHEET NO. 1

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt\_dcr\_General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:11:55 PM

DESIGN SUPERVISOR: PROJECT MANAGER: I. WOODBURY  
 DRAFTING: A. BALANEVSKIY CHECK: DESIGN: B. CARLSON



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"



AFFIX SEAL: ON: \_\_\_\_\_  
 ALTERED BY: ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 552010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- STEEL TIED ARCH

CONTRACT NUMBER

DRAWING NO. A-8

SHEET NO. 2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

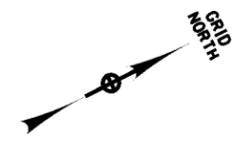
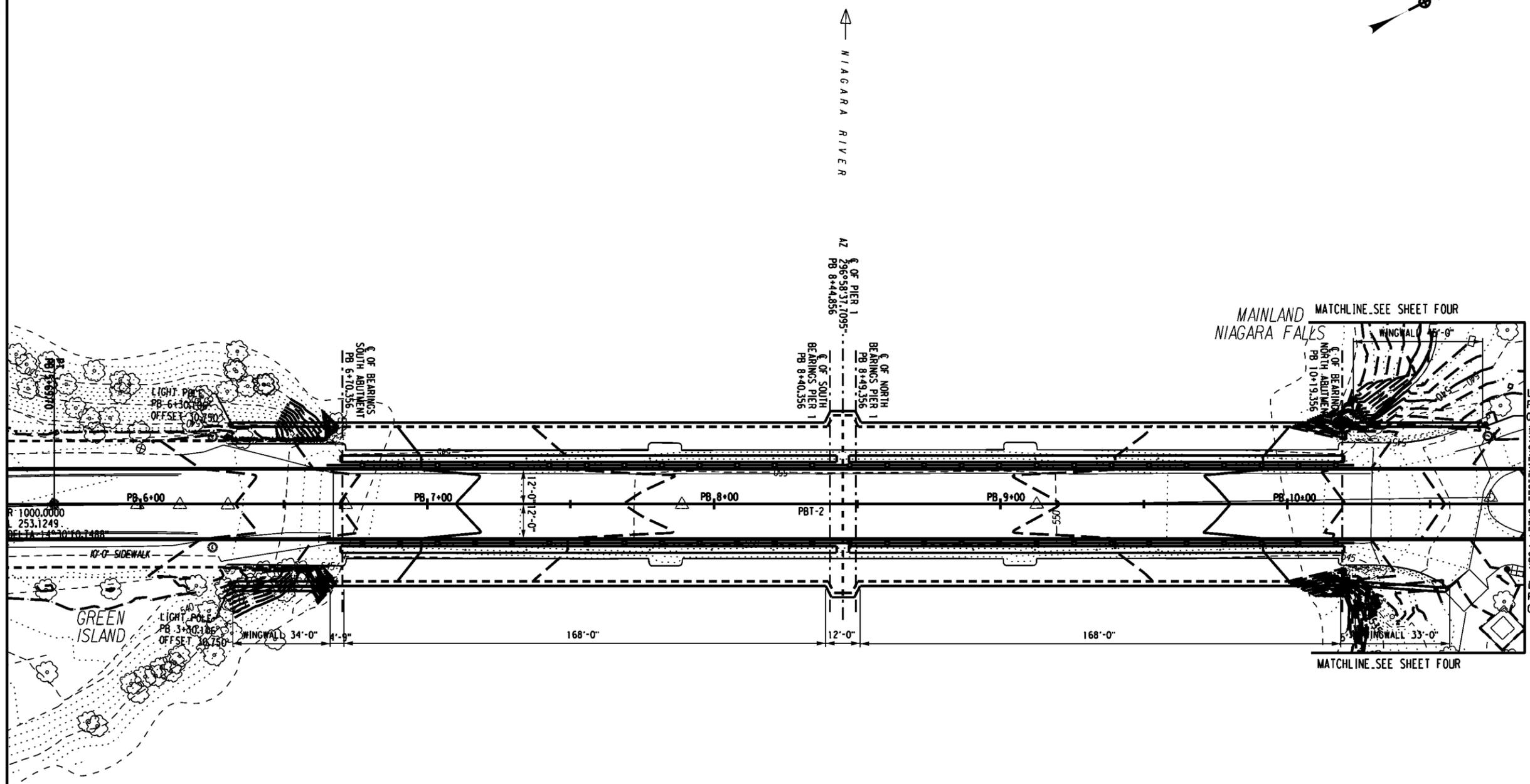
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.ddr-General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 31247 PM

DESIGN SUPERVISOR: \_\_\_\_\_ JOB MANAGER: \_\_\_\_\_ DESIGNER: B. CARLSON CHECK: \_\_\_\_\_ DRAFTER: A. BALANEVSKIY CHECK: \_\_\_\_\_ PROJECT MANAGER: \_\_\_\_\_

MATCHLINE-SEE SHEET TWO



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"
PBT-2	PB 5+69.7	N/A	528.233'	AZ 26° 58' 37.700"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_  
 ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- STEEL TIED ARCH

CONTRACT NUMBER  
 DRAWING NO. A-8  
 SHEET NO. 3

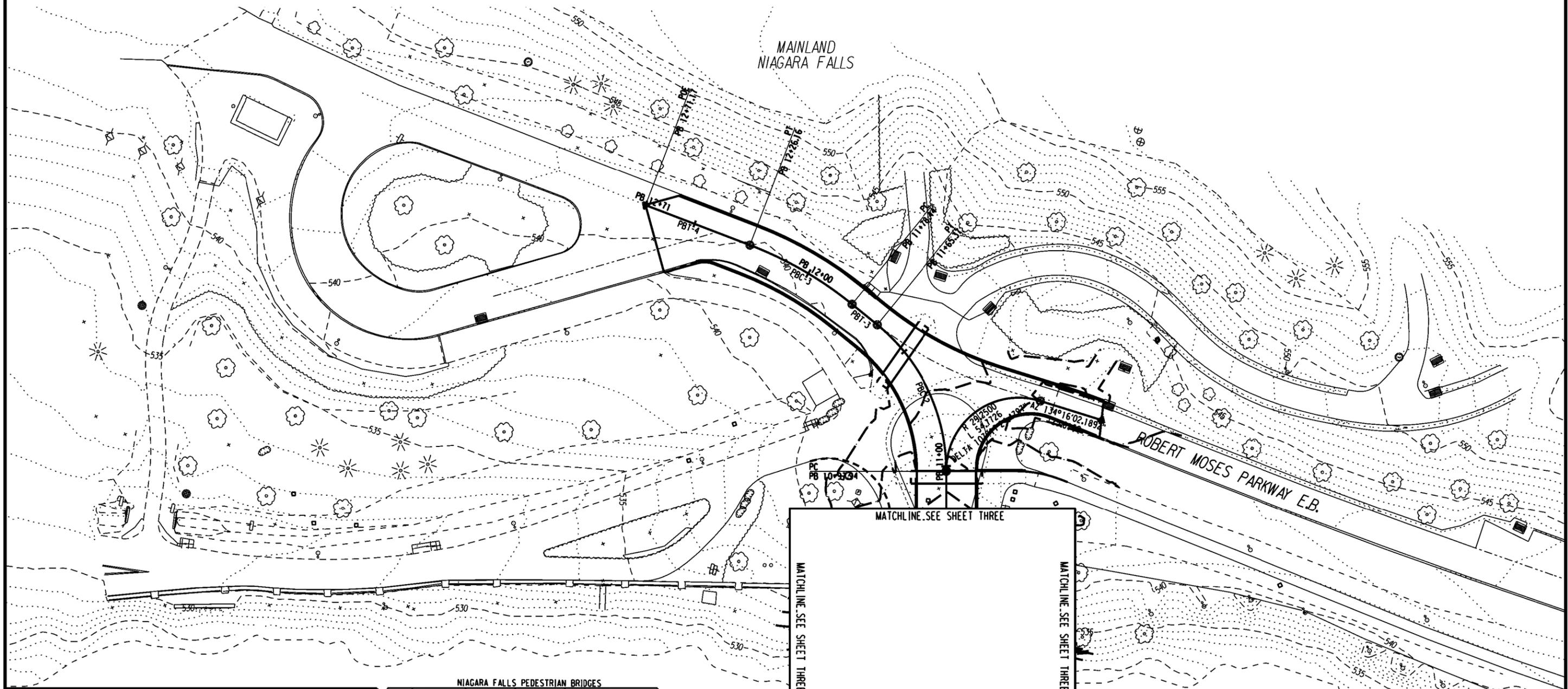


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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 USER = 3:13:36 PM

DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-2	PB 5+69.70	N/A	528.233'	AZ 26° 58' 37.700"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN - STEEL TIED ARCH

CONTRACT NUMBER

DRAWING NO. A-8

SHEET NO. 4



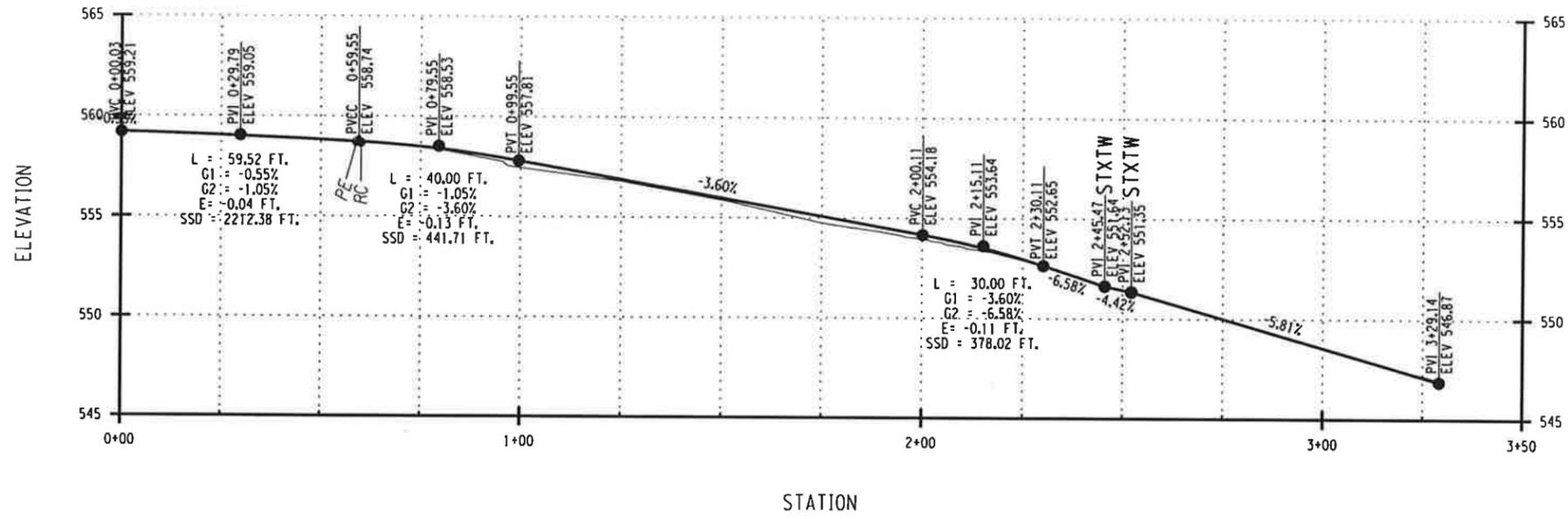
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

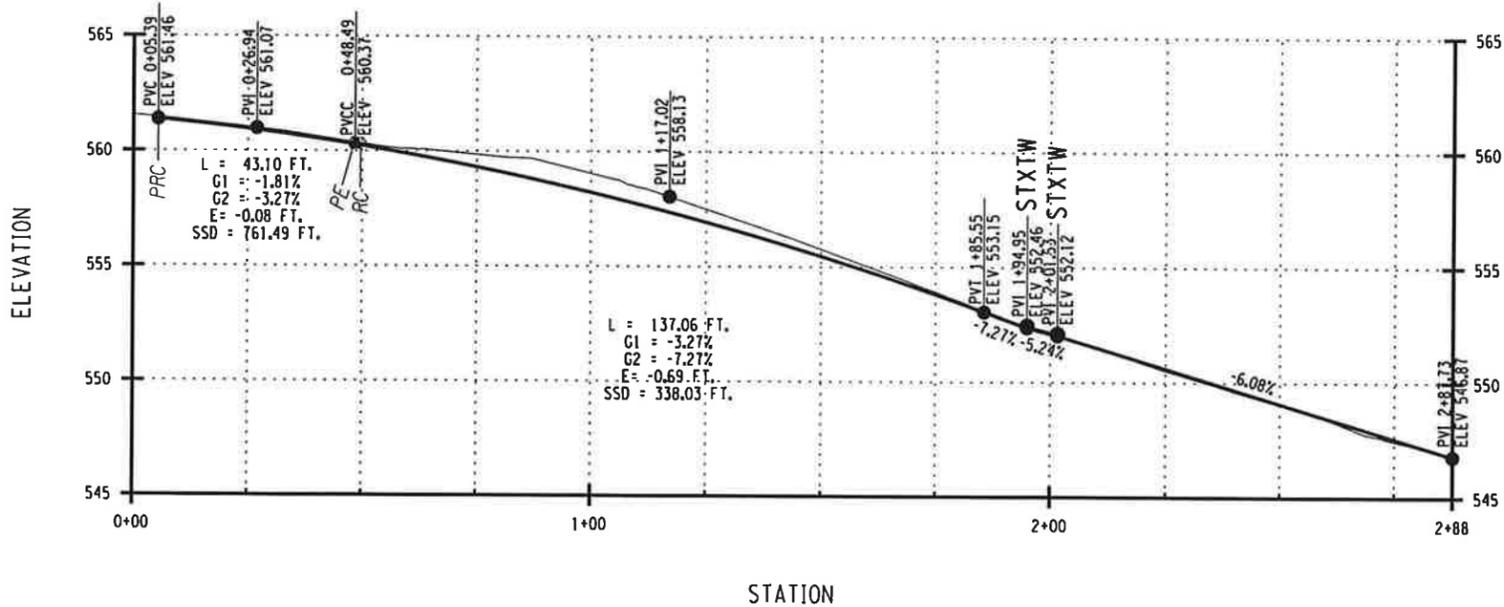
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PROJECT MANAGER T. WOODBURY  
 DRAFTING A. BALANEVSKIY  
 DESIGN B. CARLSON  
 JOB MANAGER

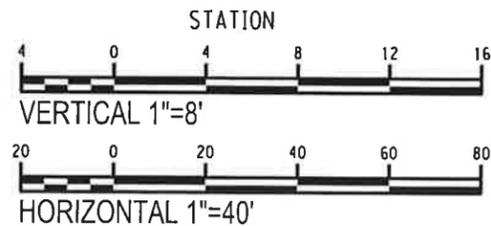
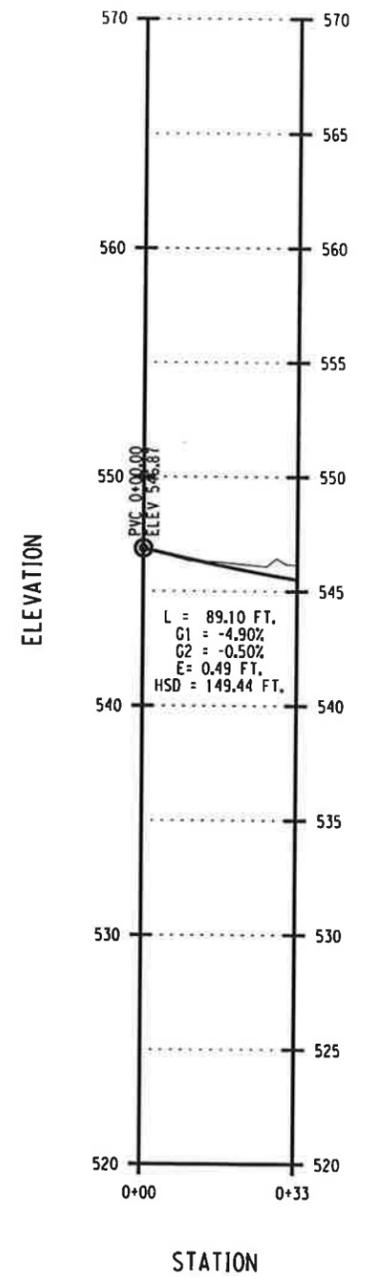
WEST GOAT ISLAND ROAD.AC.P



EAST GOAT ISLAND ROAD.AC.P



EXISTING ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
DESIGN SUPERVISOR	

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	COUNTY: NIAGARA				PROFILE - STEEL TIED ARCH	DRAWING NO. A-8
						SHEET NO. 5

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

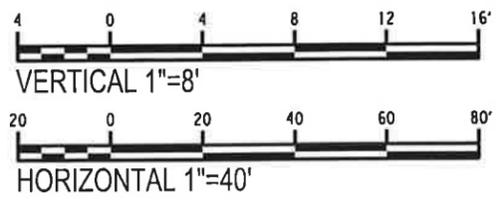
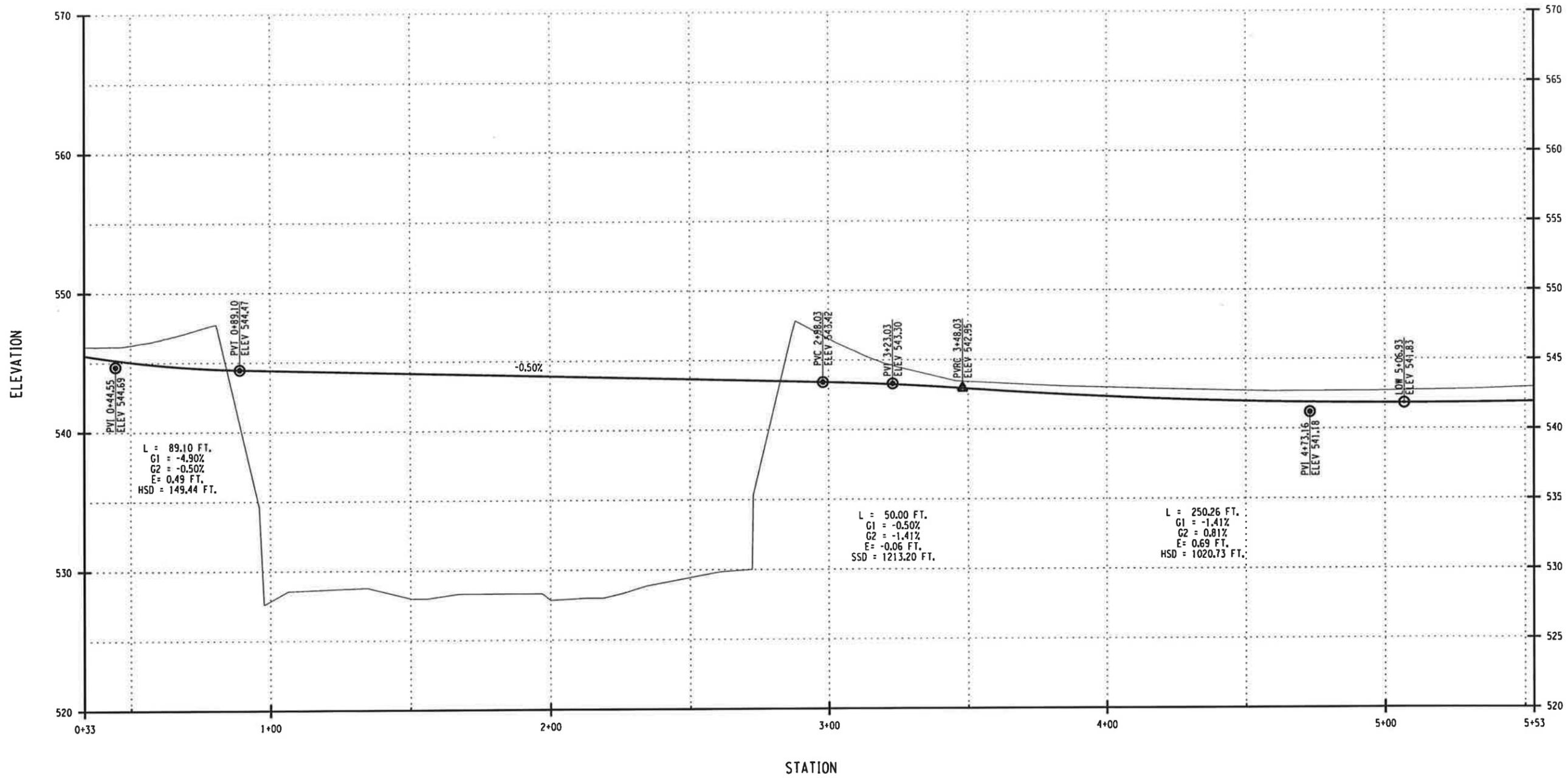


NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 575040\_rpt.dbr-General Plans and Profiles.dgn  
 DATE/TIME = 4/1/2015  
 USER = 1155523 AM

DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEYSKIY  
 CHECK  
 PROJECT MANAGER T. WOODBURY

EXISTING ALIGNMENT .AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL TIED ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-8
						SHEET NO. 6



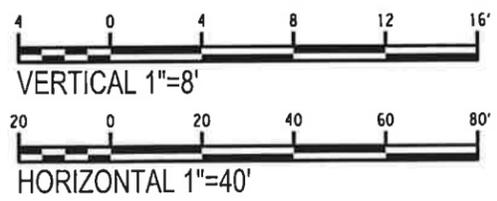
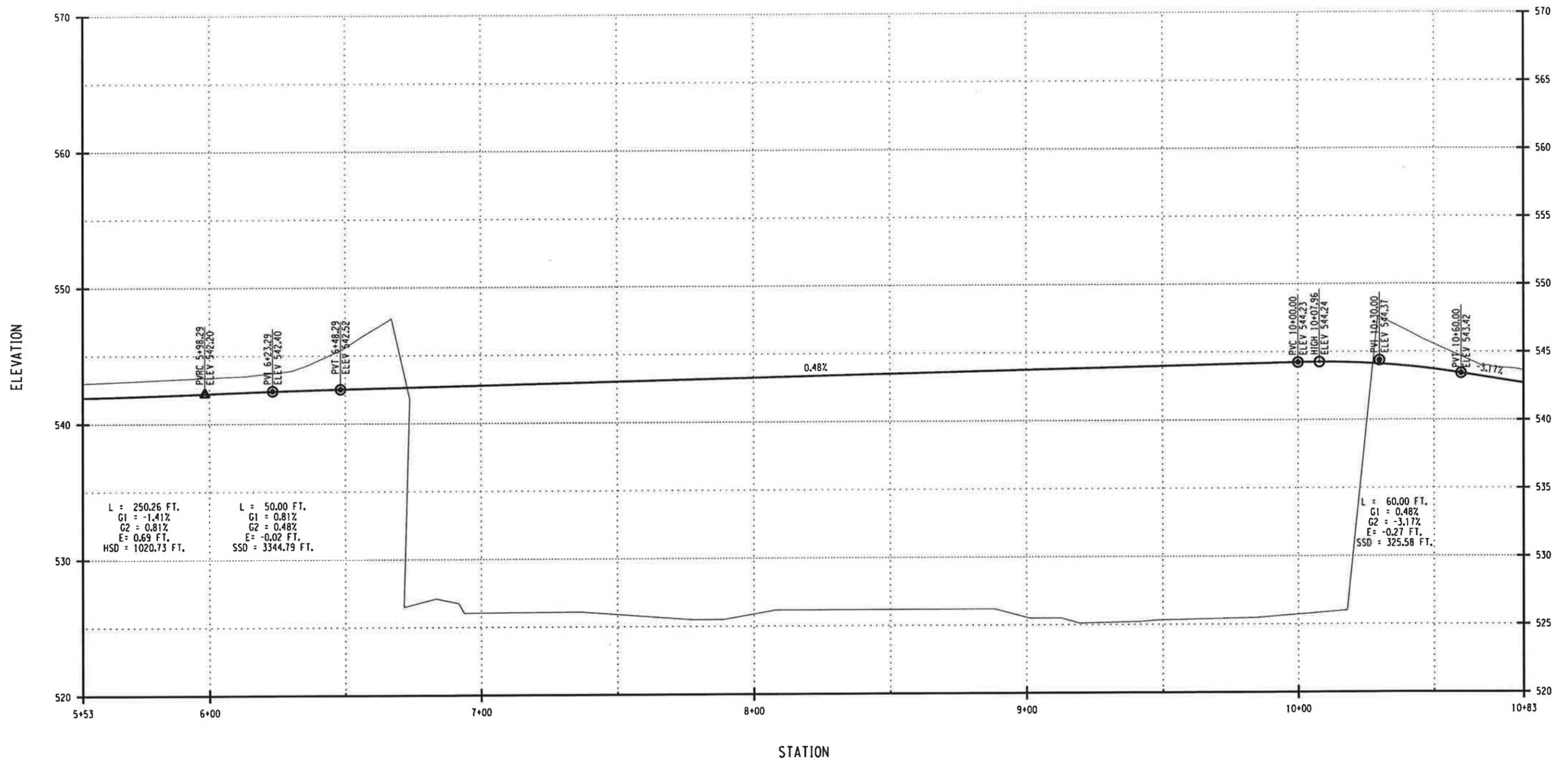
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME : 576040\_rpt.dwg  
 DATE/TIME : 4/3/2015  
 USER : 416628 PM

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR

EXISTING ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	COUNTY: NIAGARA				PROFILE - STEEL TIED ARCH	DRAWING NO. A-8
						SHEET NO. 7

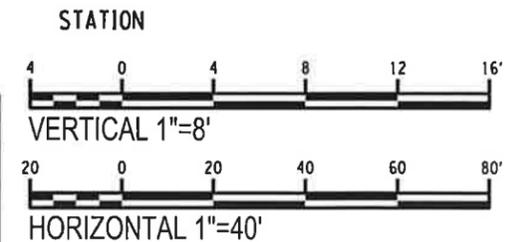
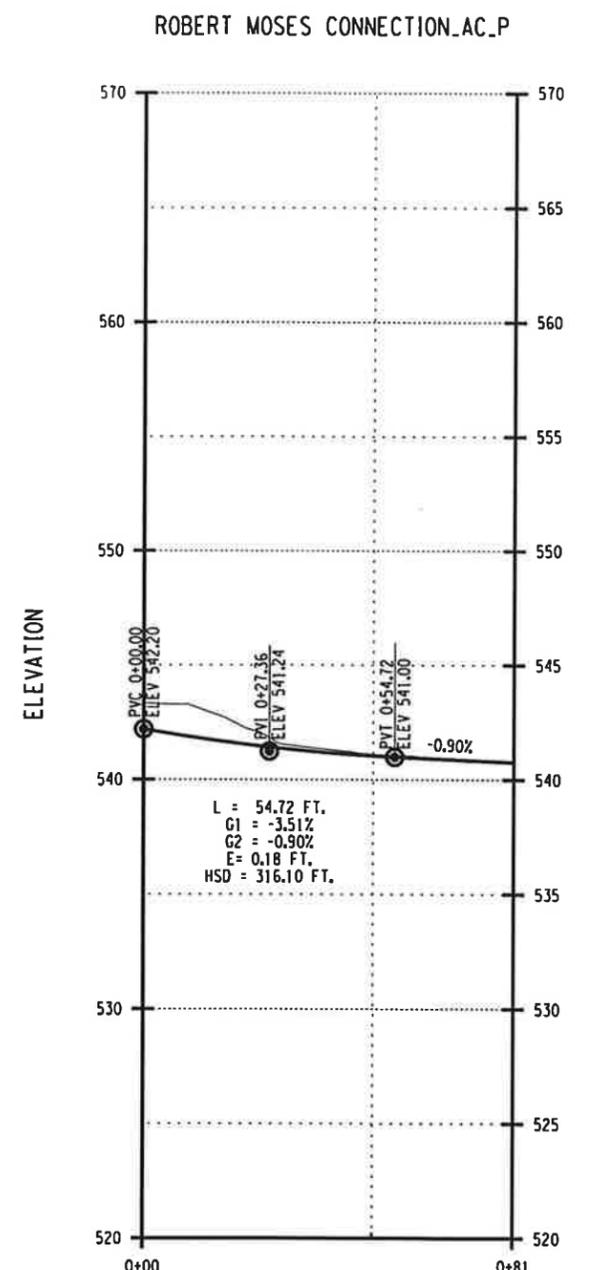
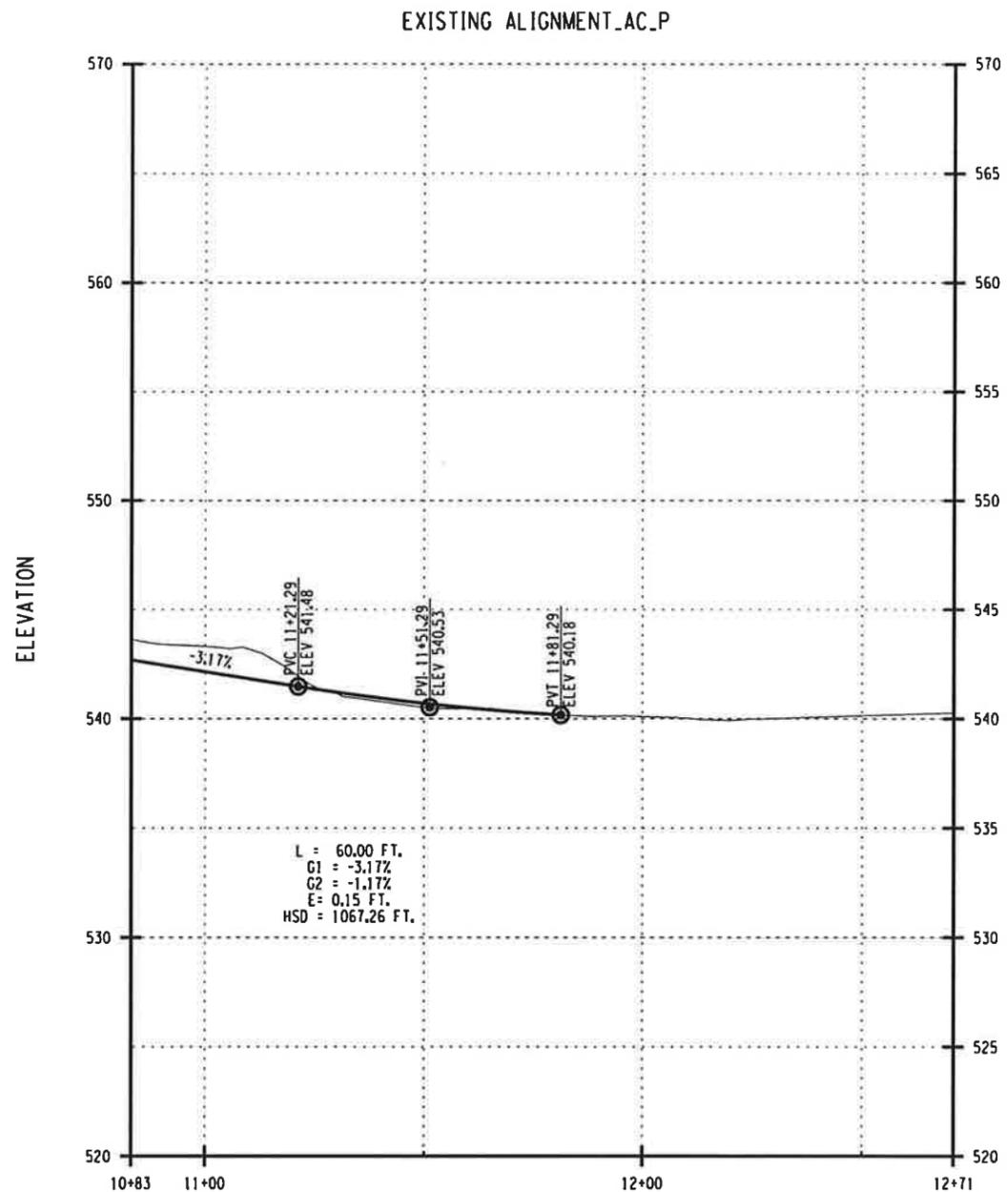


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

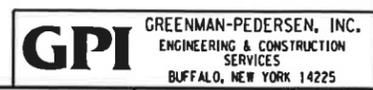
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 USER = 41855

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 DESIGN SUPERVISOR



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - STEEL TIED ARCH	DRAWING NO. A-8
					SHEET NO. 8



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

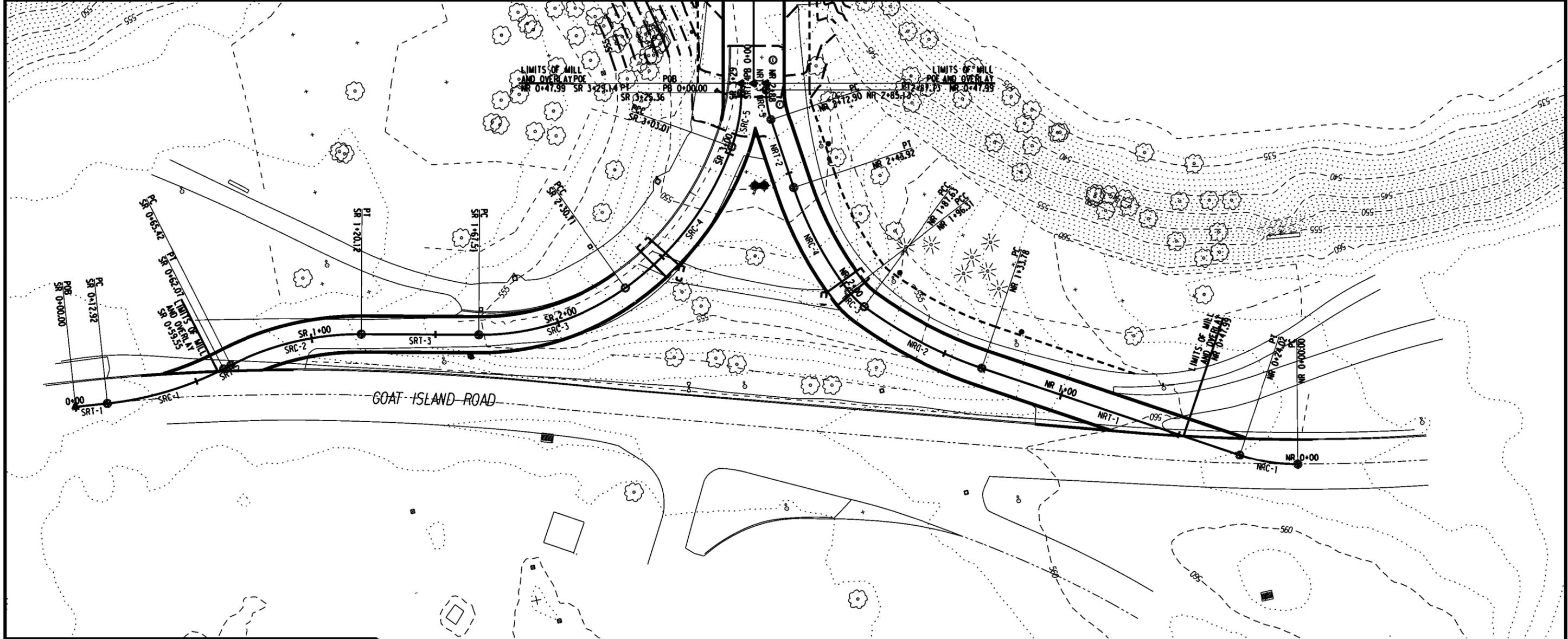
NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

PB 0+00  
 OFFSET 5.0'  
 NR 2+88  
 SR 3+29



MATCHLINE SEE SHEET TWO

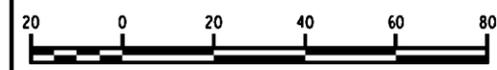
MATCHLINE SEE SHEET TWO



PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER DESIGN SUPERVISOR

FILE NAME = 576040.rpt.dfr.General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:24:37 PM

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- STEEL GIRDER

CONTRACT NUMBER  
 DRAWING NO. A-9  
 SHEET NO. 1

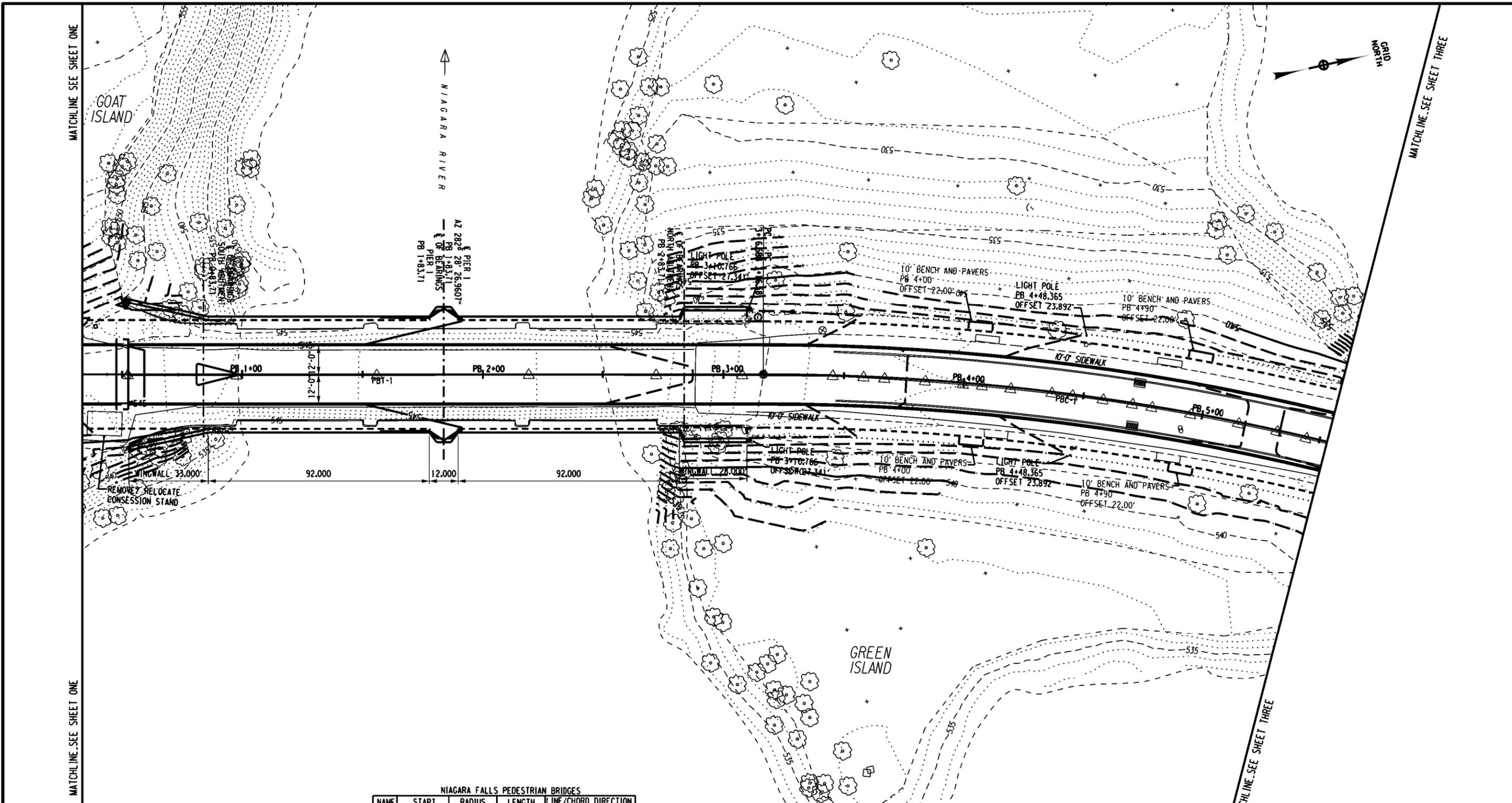


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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.dcf-Genral Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:16:52 PM

PROJECT MANAGER: I. WOODBURY  
 CHECK: DRAFTING: A. BALANEVSKIY  
 CHECK: DESIGN: B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 552010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	COUNTY: NIAGARA				GENERAL PLAN- STEEL GIRDER	DRAWING NO. A-9
						SHEET NO. 2

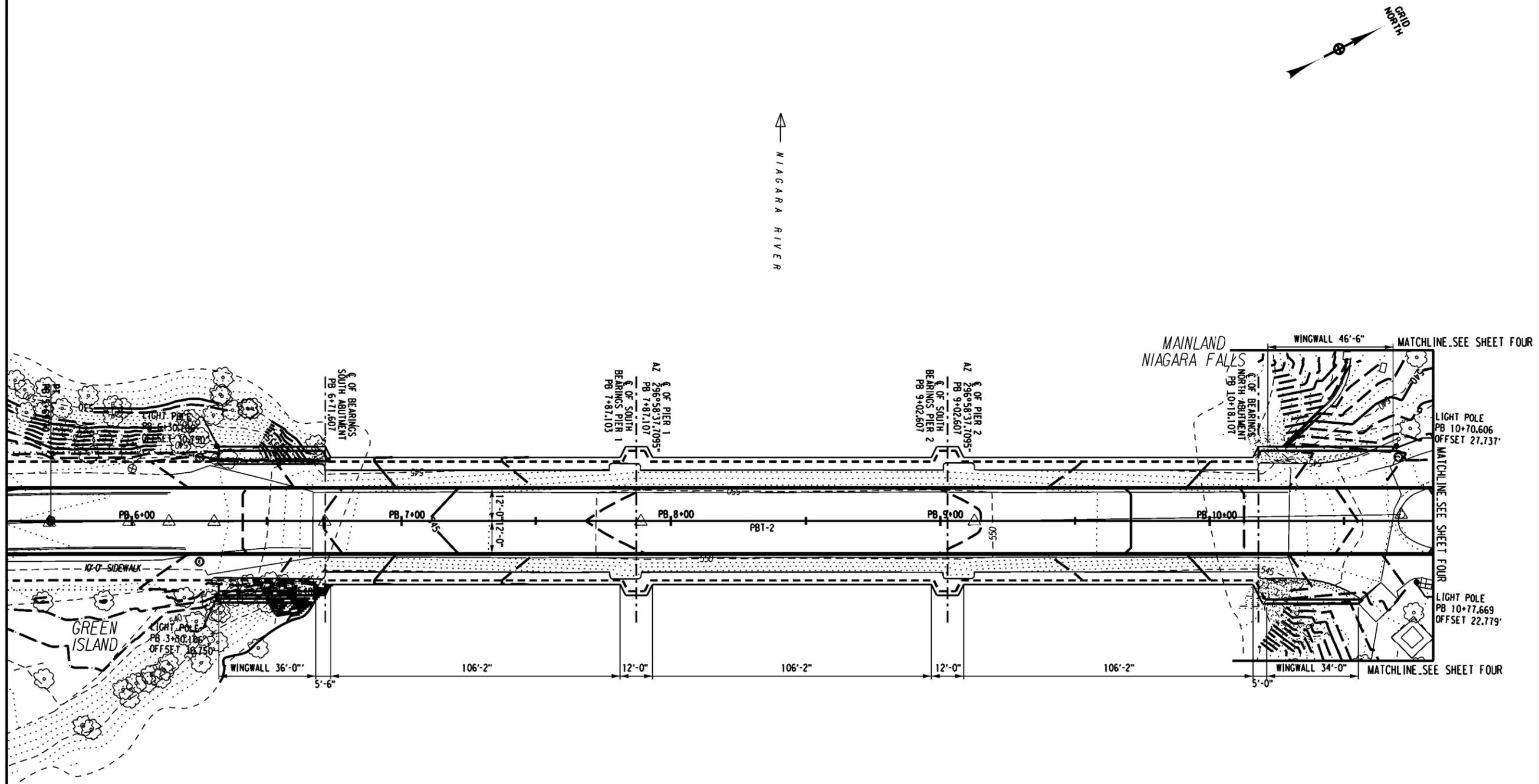
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

FILE NAME = 576040\_rpt.dwg - General Plans and Profiles.dwg  
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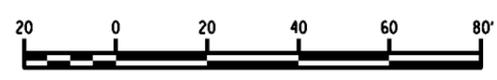
DESIGN SUPERVISOR: \_\_\_\_\_ JOB MANAGER: \_\_\_\_\_ DESIGNER: B. CARLSON CHECK: \_\_\_\_\_ DRAFTER: A. BALANEVSKIY CHECK: \_\_\_\_\_ PROJECT MANAGER: \_\_\_\_\_

MATCHLINE-SEE SHEET TWO



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"
PBT-2	PB 5+69.7	N/A	528.233'	AZ 26° 58' 37.700"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
GENERAL PLAN- STEEL GIRDER			DRAWING NO. A-9	
			SHEET NO. 3	

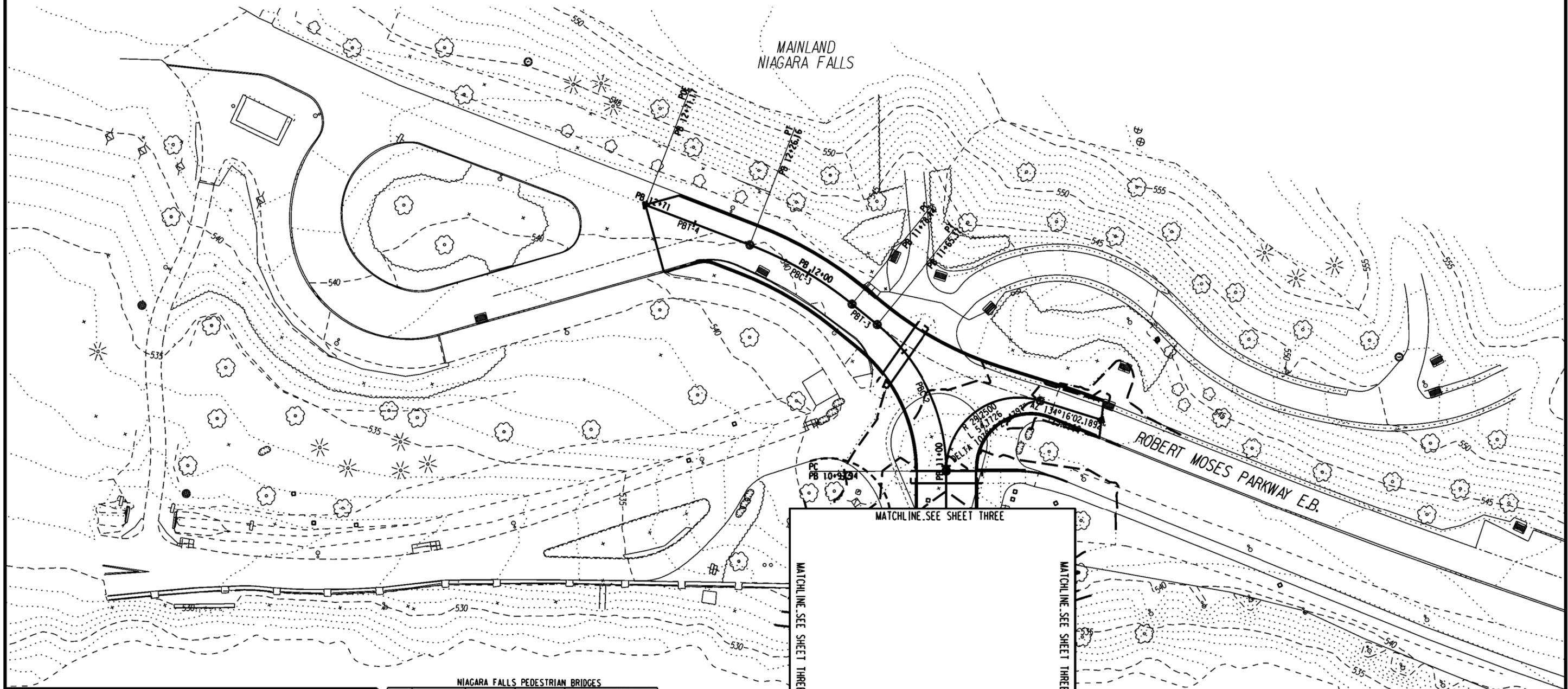
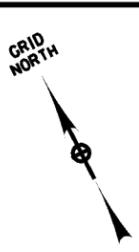
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT



FILE NAME = 576940.rpt.dbr-General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 3:23:58 PM

DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGNER B. CARLSON  
 CHECKER  
 DRAFTING A. BALANEVSKIY  
 CHECKER  
 PROJECT MANAGER



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-2	PB 5+69.70	N/A	528.233'	AZ 26° 58' 37.700"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN - STEEL GIRDER

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

CONTRACT NUMBER \_\_\_\_\_

DRAWING NO. A-9

SHEET NO. 4

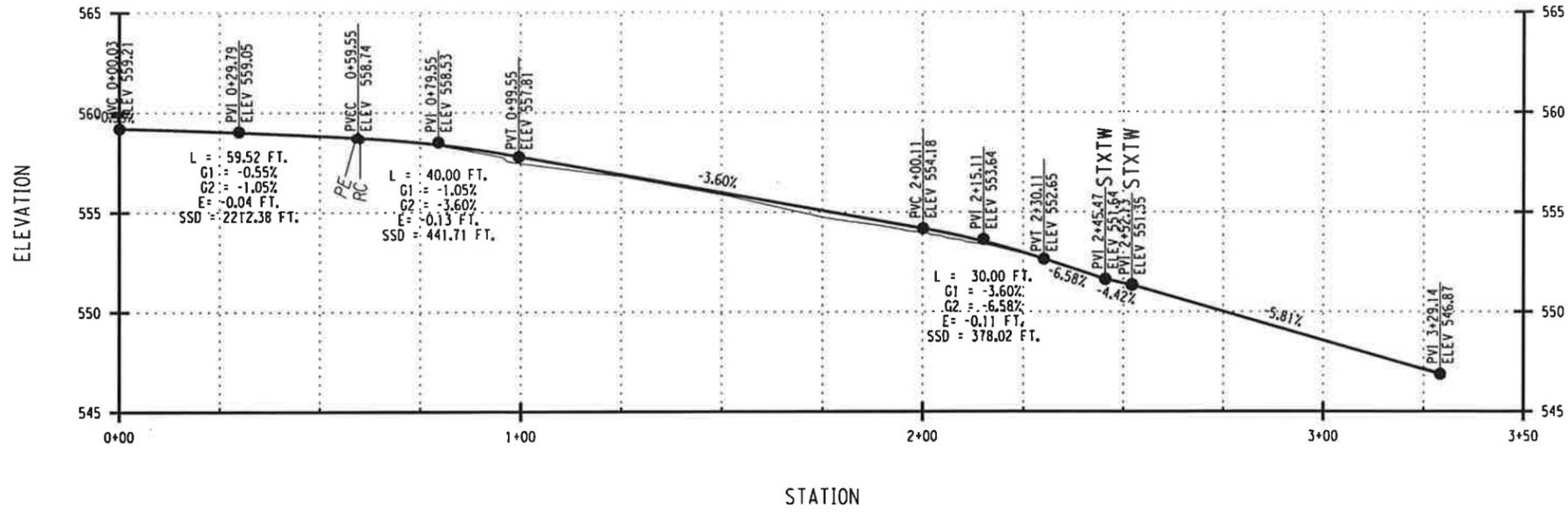
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

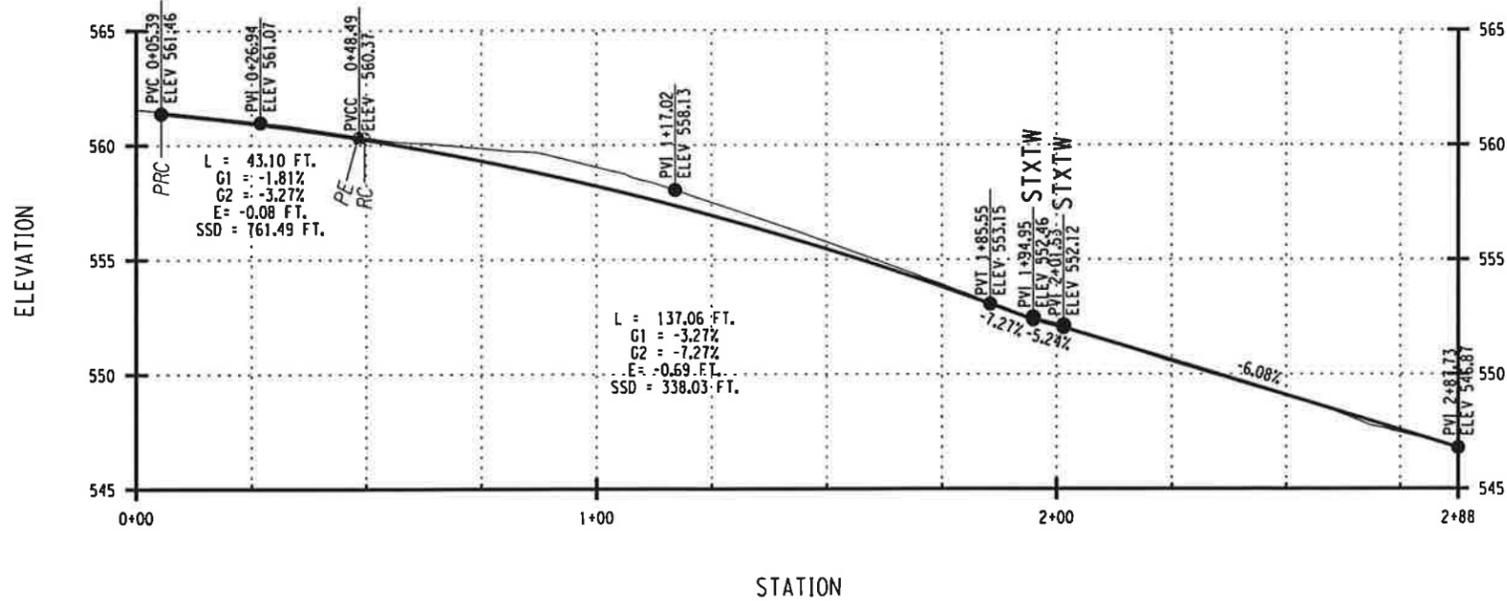
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PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEYSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER DESIGN SUPERVISOR

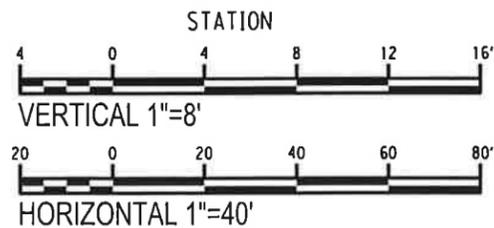
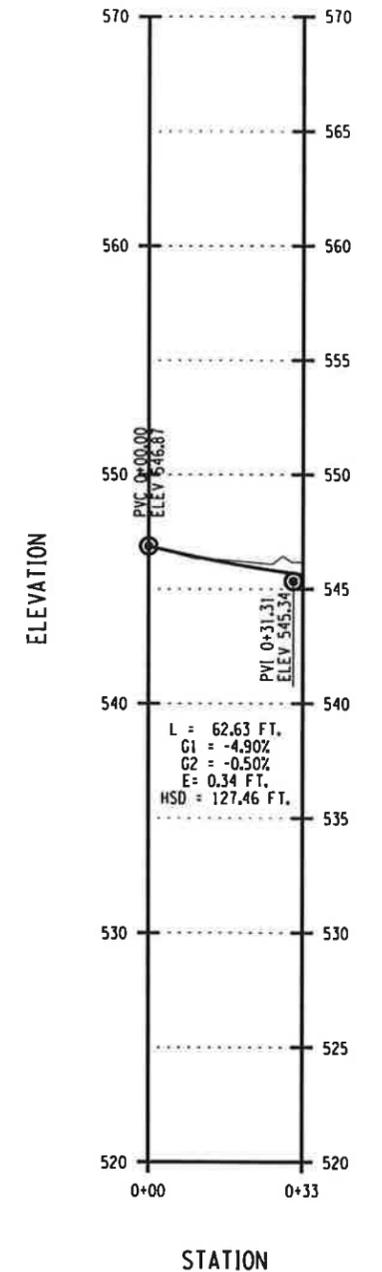
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EAST GOAT ISLAND ROAD.AC.P



EXISTING ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - STEEL GIRDER	DRAWING NO. A-9
					SHEET NO. 5

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

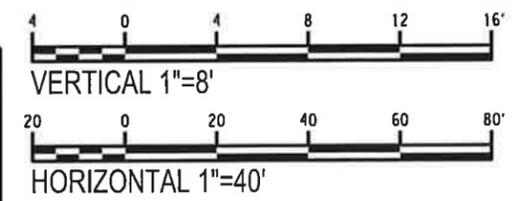
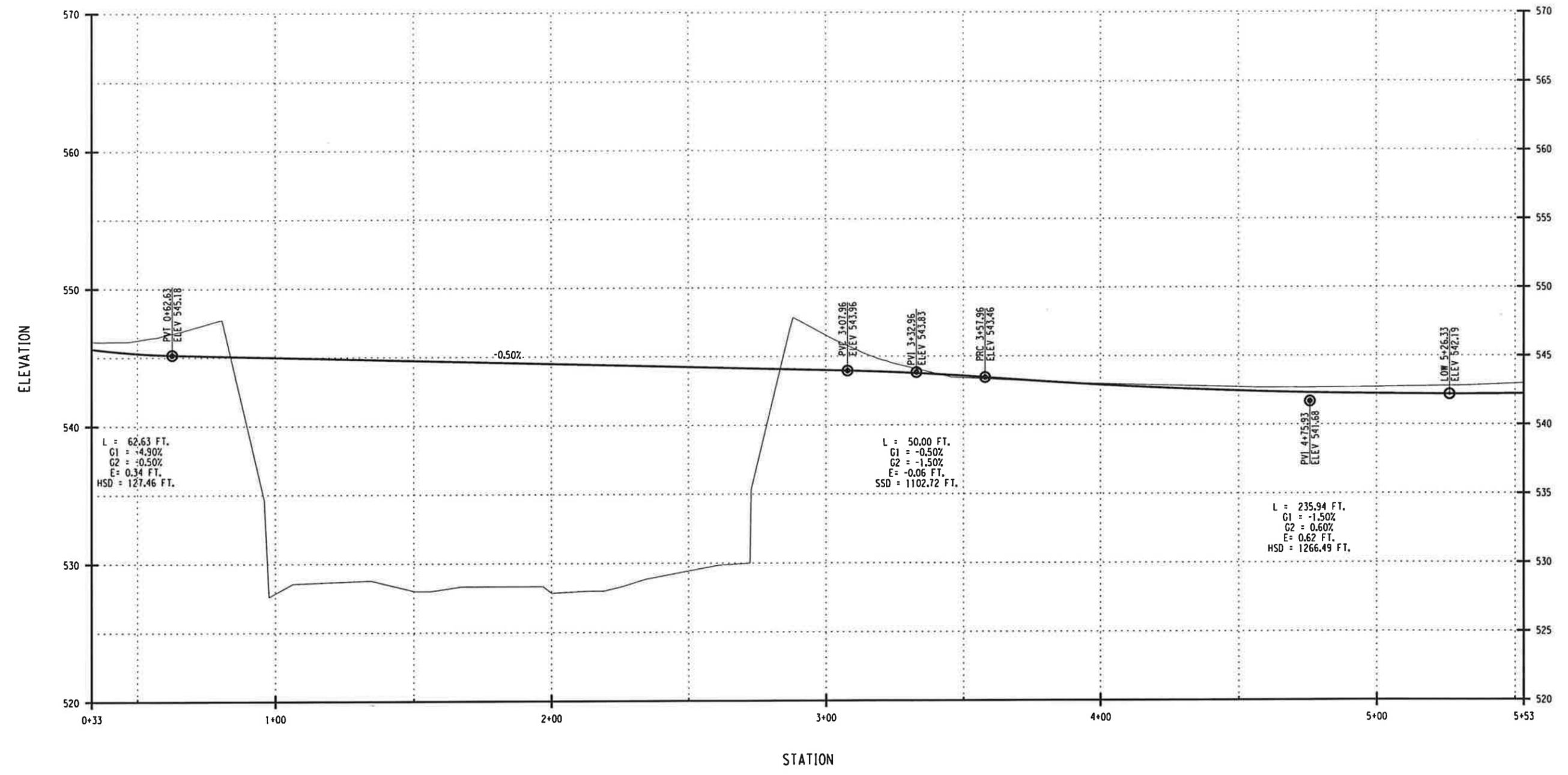


NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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JOB MANAGER: PROJECT MANAGER T. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 DESIGN SUPERVISOR:

EXISTING ALIGNMENT .AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-9
						SHEET NO. 6



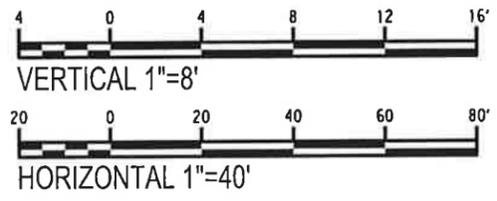
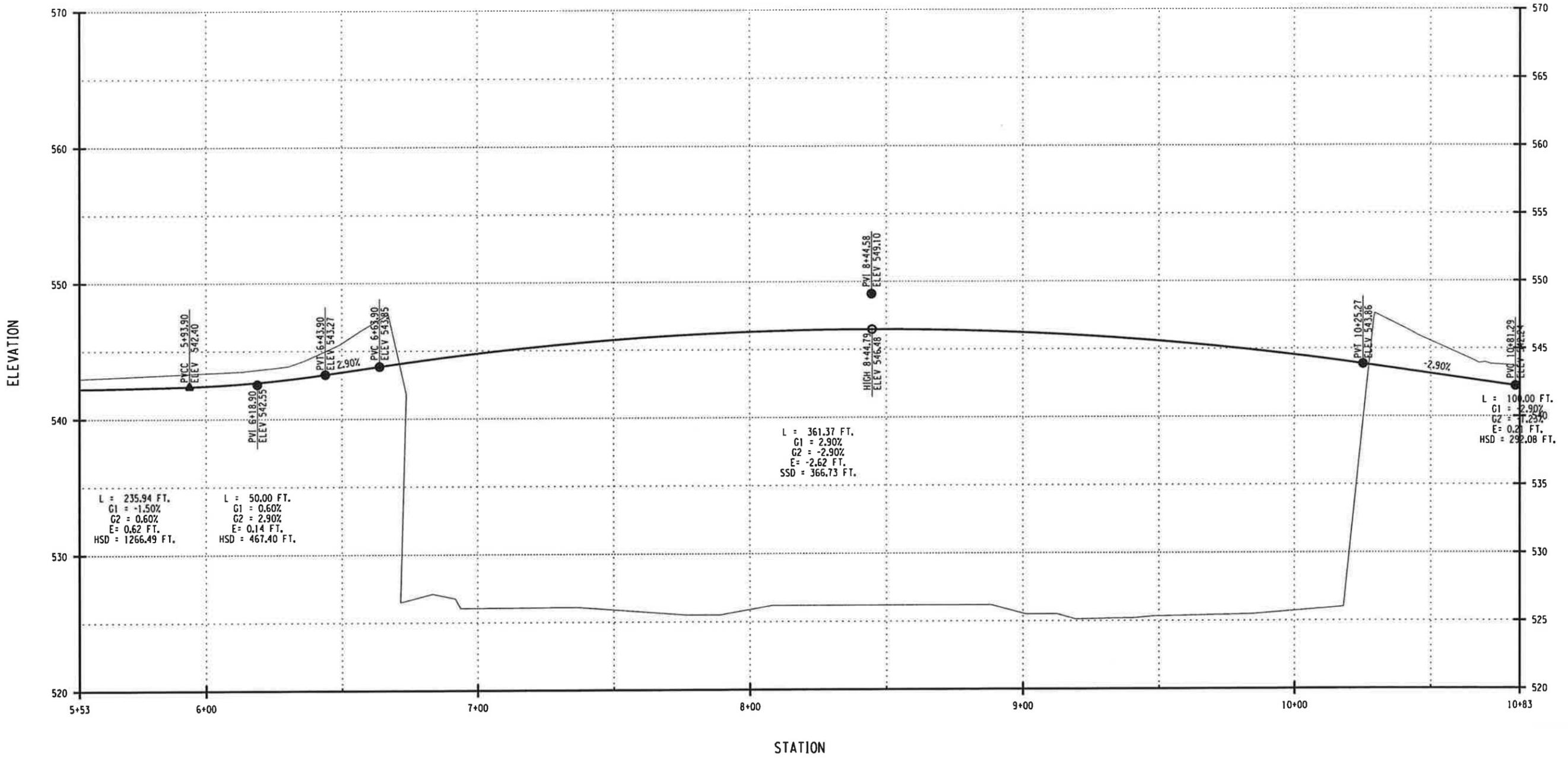
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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 DATE/TIME = 2/3/2015  
 USER = 3:52:42 PM

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR

EXISTING ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CURVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-9
						SHEET NO. 7

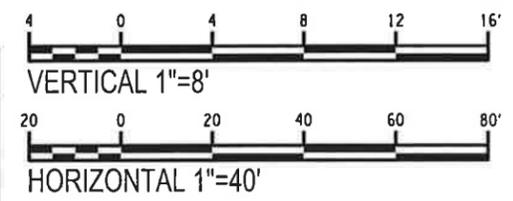
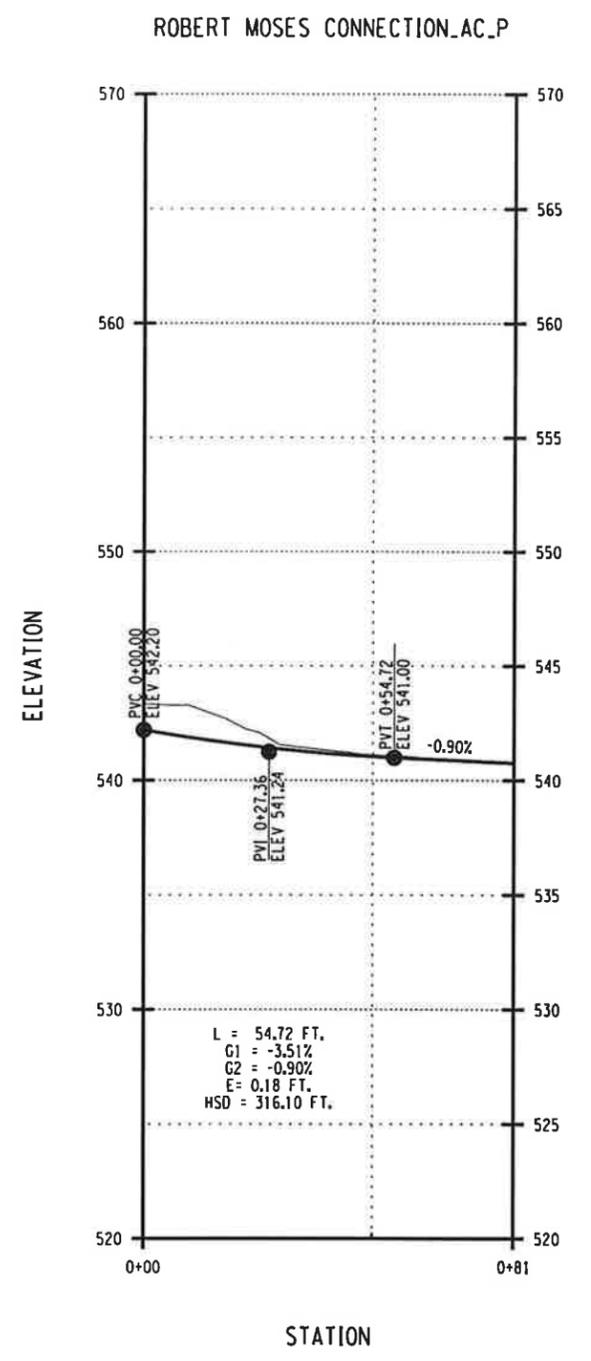
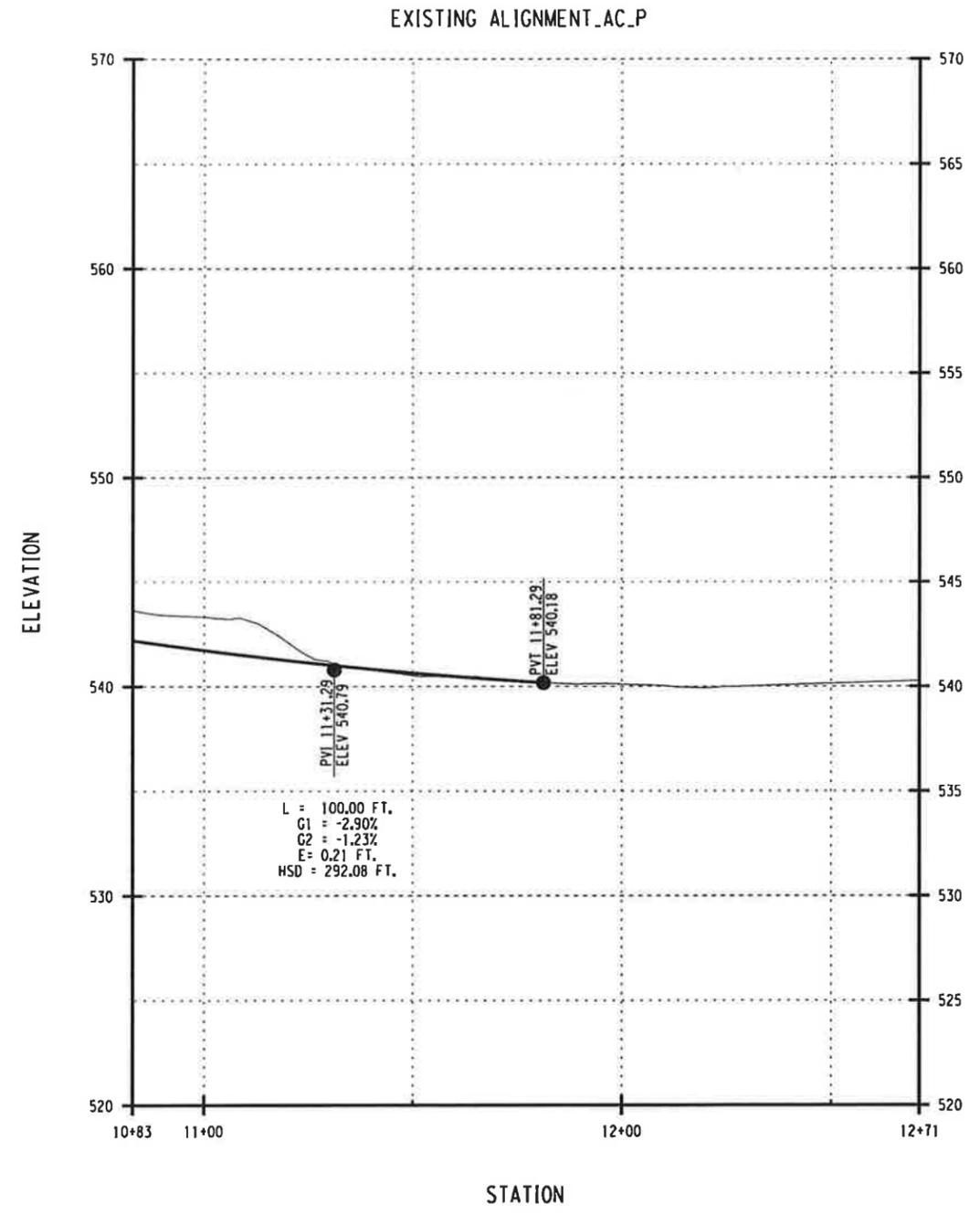
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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 DATE/TIME = 2/5/2015  
 USER = 91312 AM

PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-9
						SHEET NO. 8



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

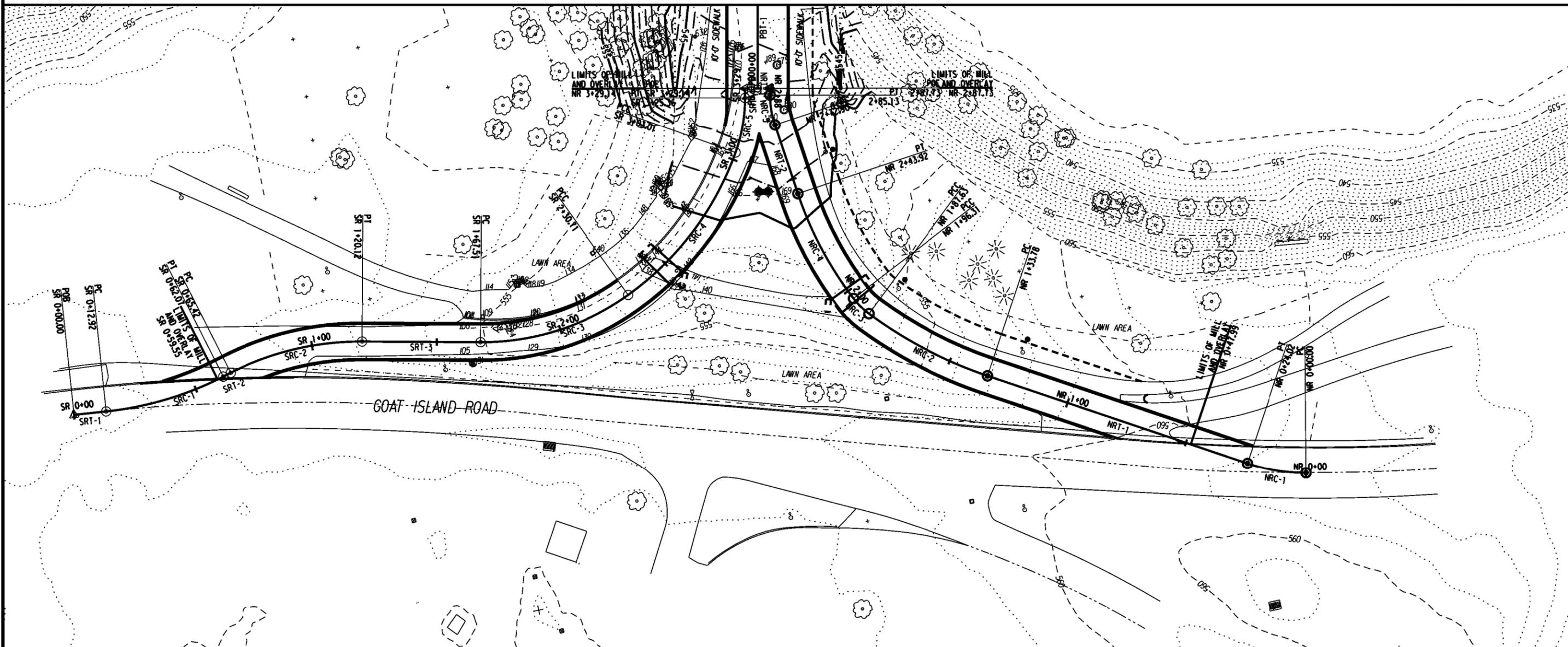
PB 0+00  
 OFFSET 5.0'  
 NR 2+88  
 SR 3+29

GRID NORTH



MATCHLINE SEE SHEET TWO

MATCHLINE SEE SHEET TWO



PROJECT MANAGER T. WOODBURY

CHECK

DRAFTING A. BALANEVSKIY

CHECK

DESIGN B. CARLSON

JOB MANAGER

DESIGN SUPERVISOR

FILE NAME = 576040\_rpt.dcf - General Plans and Profiles.dgn  
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AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

AMERICAN FALLS BRIDGES  
 \_\_\_\_\_  
 \_\_\_\_\_  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES  
 5522000  
 5522010  
 CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER  
 DRAWING NO. A-10  
 SHEET NO. 1

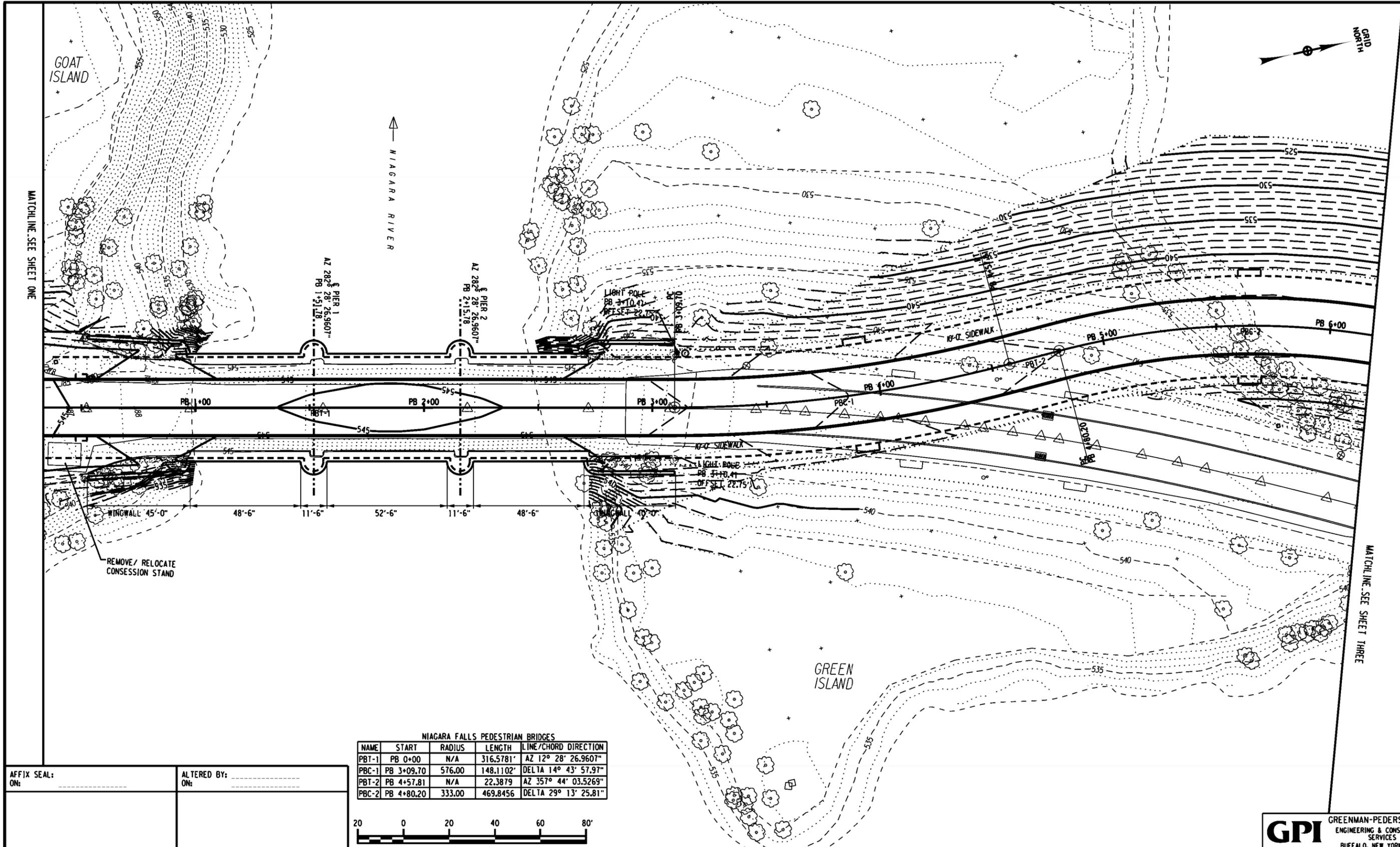
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME = 9/22/2015  
 USER = 2:32:55 PM

PROJECT MANAGER: I. WOODBURY  
 CHECK: DRAFTING: A. BALANEVSKIY  
 CHECK: DESIGN: B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+09.70	576.00	148.1102'	DELTA 14° 43' 57.97"
PBT-2	PB 4+57.81	N/A	22.3879'	AZ 357° 44' 03.5269"
PBC-2	PB 4+80.20	333.00	469.8456'	DELTA 29° 13' 25.81"



AFFIX SEAL: ON: \_\_\_\_\_  
 ALTERED BY: ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES

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COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER

DRAWING NO. A-10

SHEET NO. 2

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

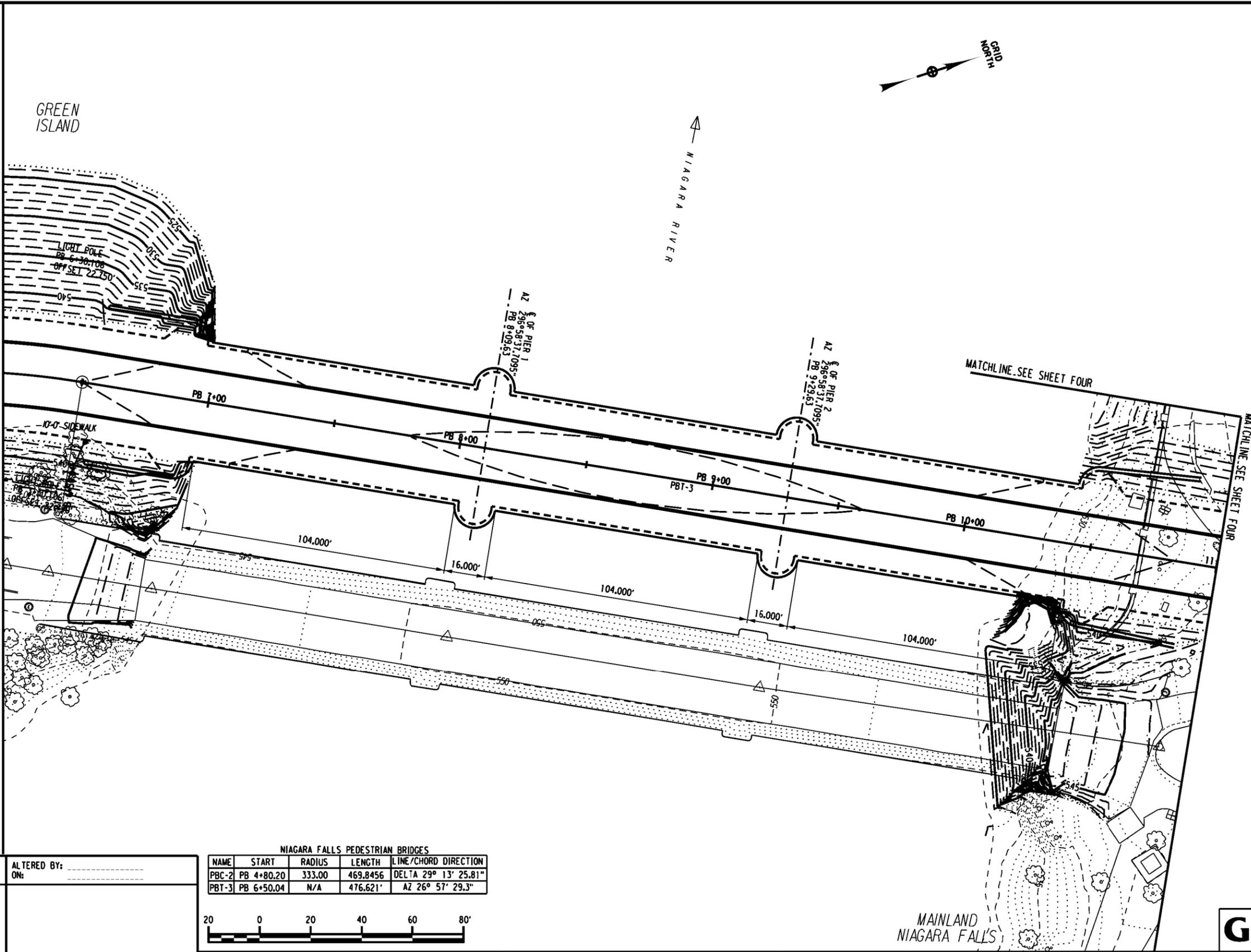
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040.rpt.ddr-General Plans and Profiles.dgn  
 DATE/TIME = 9/22/2015  
 USER = 2:33:33 PM

DESIGN SUPERVISOR: \_\_\_\_\_  
 JOB MANAGER: \_\_\_\_\_  
 DESIGNER: B. CARLSON  
 CHECKER: \_\_\_\_\_  
 DRAFTER: A. BALANEVSKIY  
 CHECKER: \_\_\_\_\_  
 PROJECT MANAGER: I. WOODBURY

MATCHLINE: SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"
PBT-3	PB 6+50.04	N/A	476.621'	AZ 26° 57' 29.3"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER \_\_\_\_\_

DRAWING NO. A-10

SHEET NO. 3

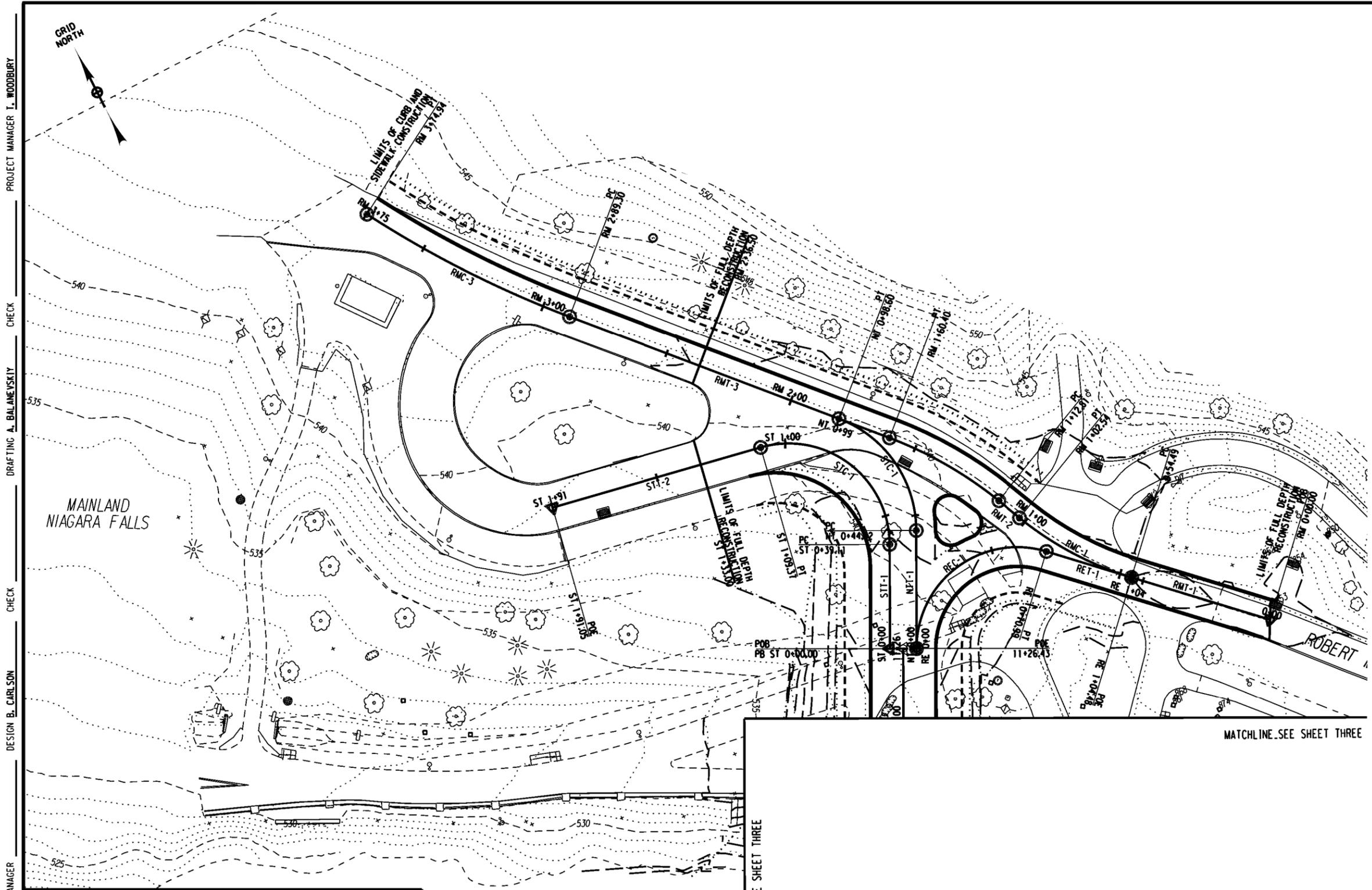
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
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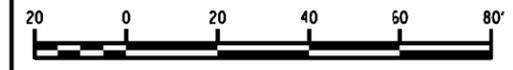
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 OFFSET 5.0'  
 RE 0+00  
 ST 0+00  
 NT 0+00



PROJECT MANAGER: T. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

FILE NAME: 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME: 9/22/2015  
 USER: 2:34:08 PM

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES	PIN 576040
BRIDGES 5522000 5522010	CULVERTS NONE
COUNTY: NIAGARA	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

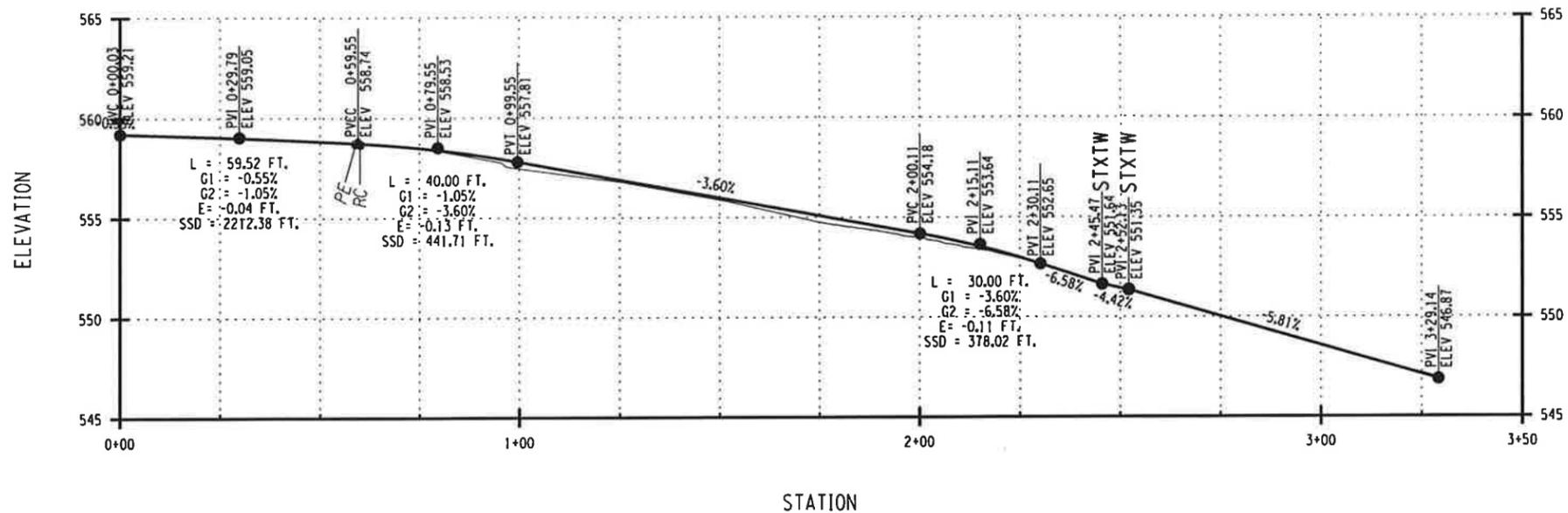
GENERAL PLAN- PRECAST CONCRETE ARCH	CONTRACT NUMBER
	DRAWING NO. A-10
	SHEET NO. 4

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

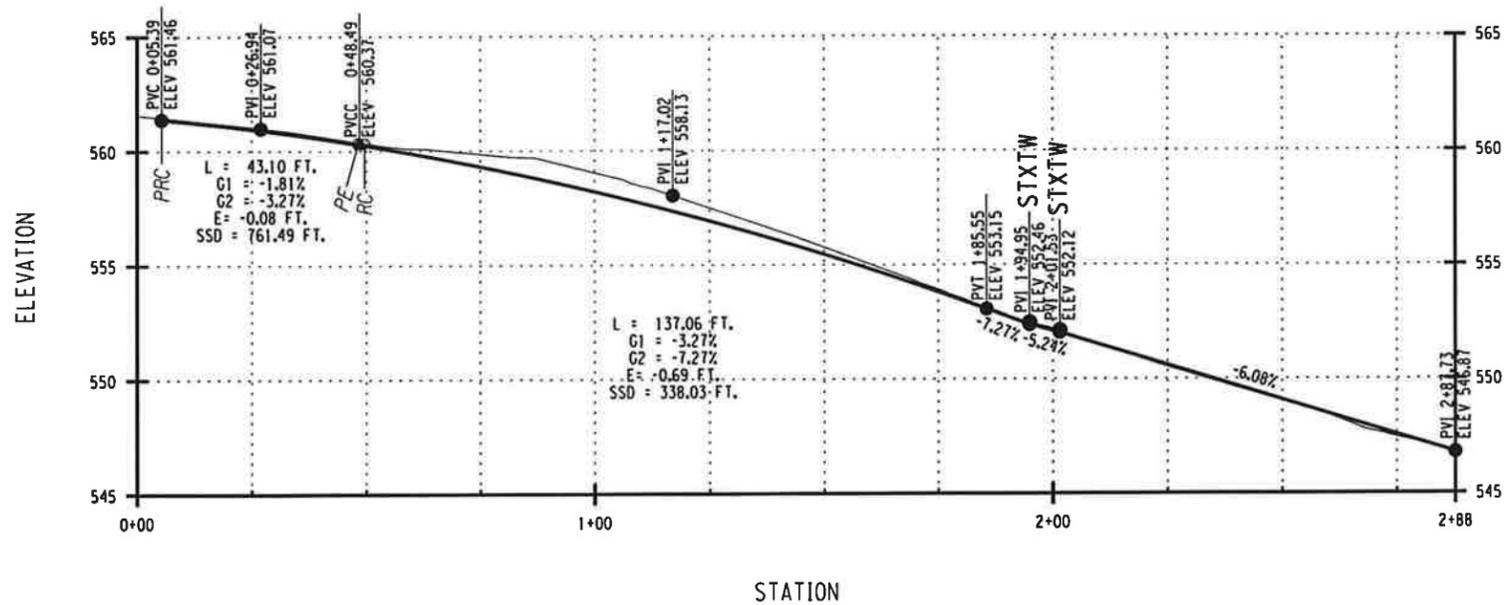
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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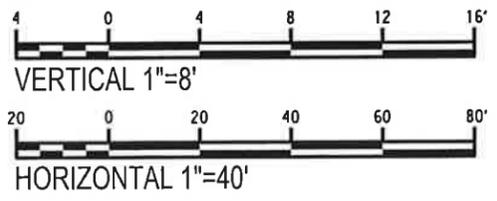
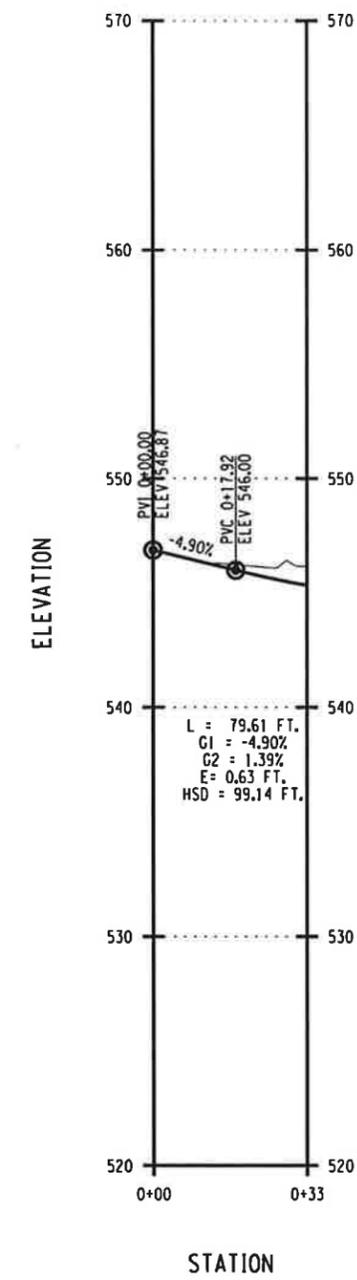
WEST GOAT ISLAND ROAD.AC.P



EAST GOAT ISLAND ROAD.AC.P



ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS: _____ _____ _____	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - PRECAST CONCRETE ARCH	DRAWING NO. A-10 SHEET NO. 5



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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DESIGN SUPERVISOR

DESIGN B. CARLSON

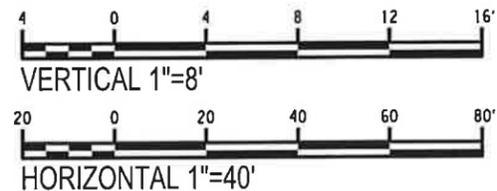
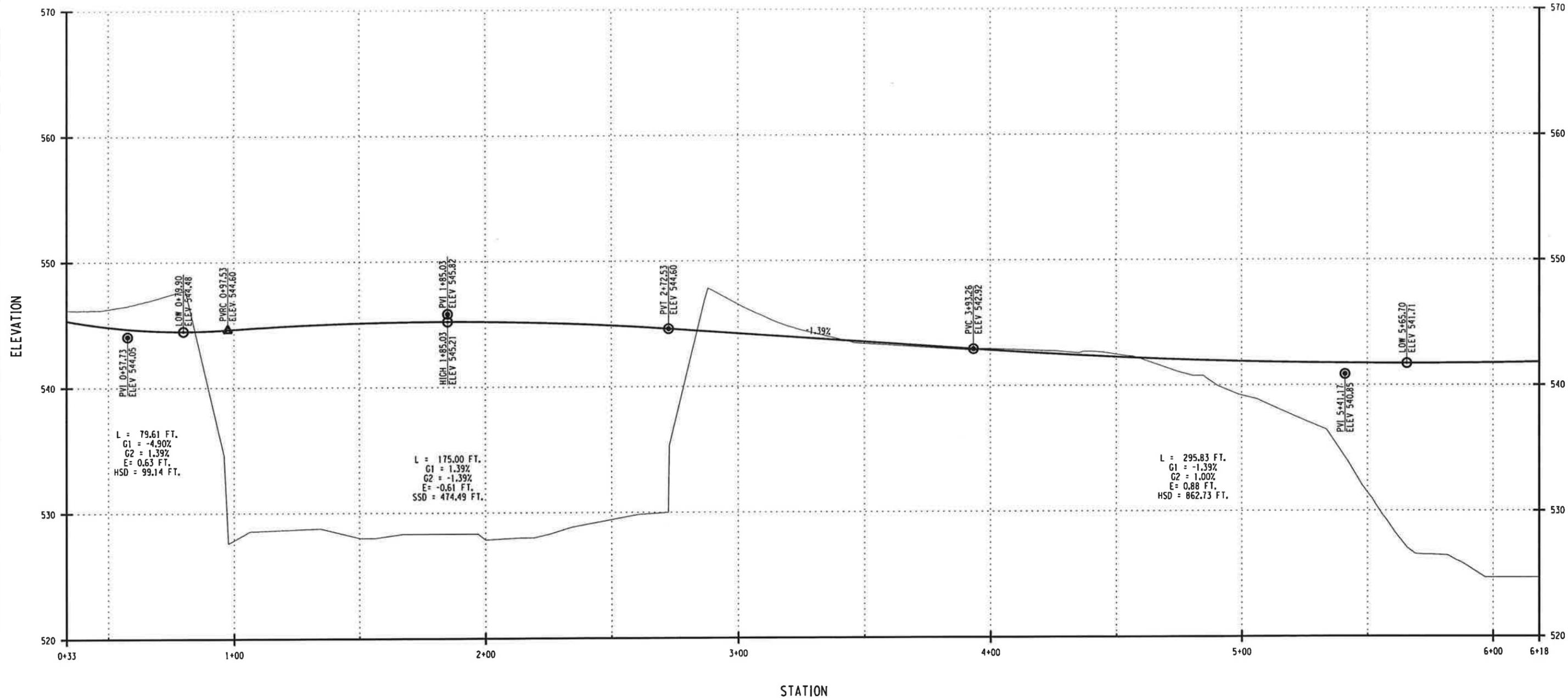
CHECK

DRAFTING A. BALANEVSKIY

CHECK

PROJECT MANAGER I. WOODBURY

ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

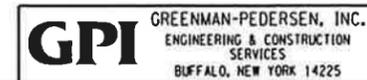
PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
 PROFILE - PRECAST CONCRETE ARCH

CONTRACT NUMBER  
 DRAWING NO. A-10  
 SHEET NO. 6



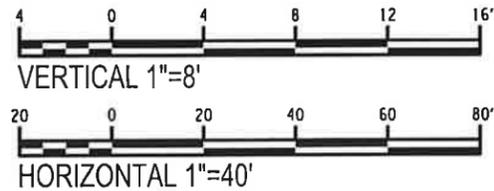
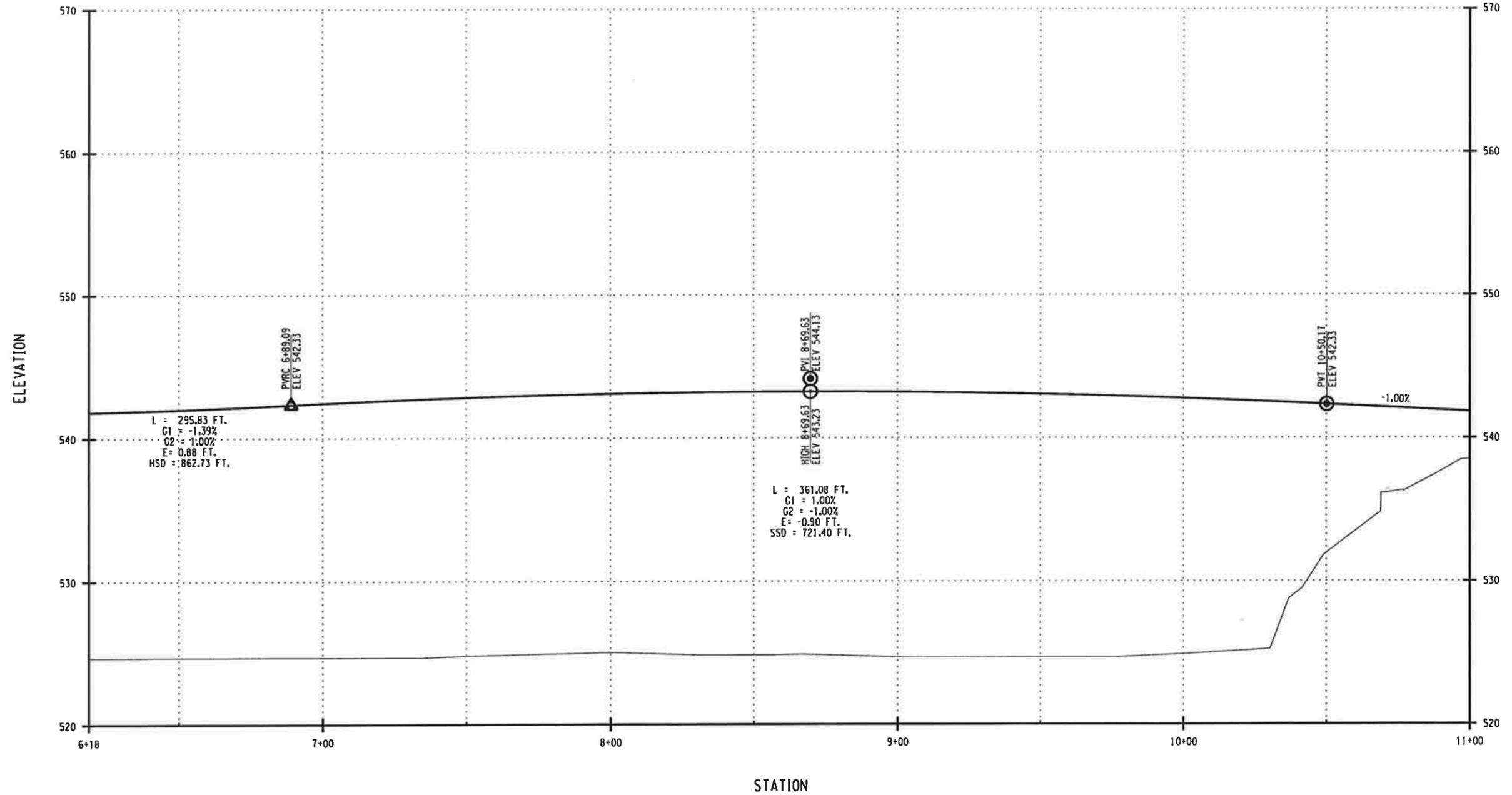
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040.rpt.ddt.General Plans and Profiles.dgn  
 DATE/TIME = 2/4/2015  
 USER = 10:16:51 AM

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR

ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - PRECAST CONCRETE ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-10
						SHEET NO. 7

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

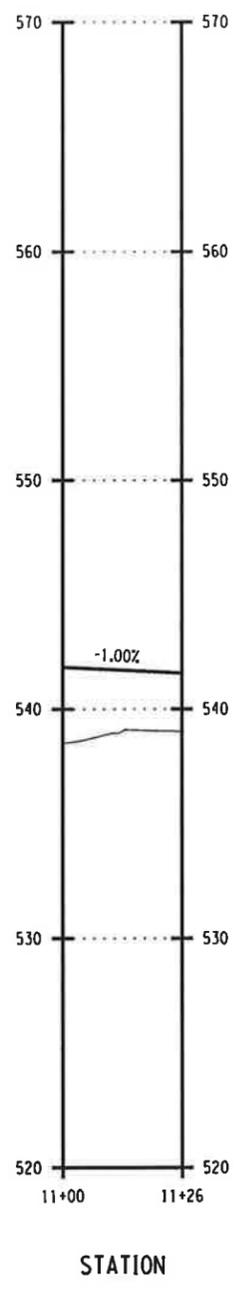
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

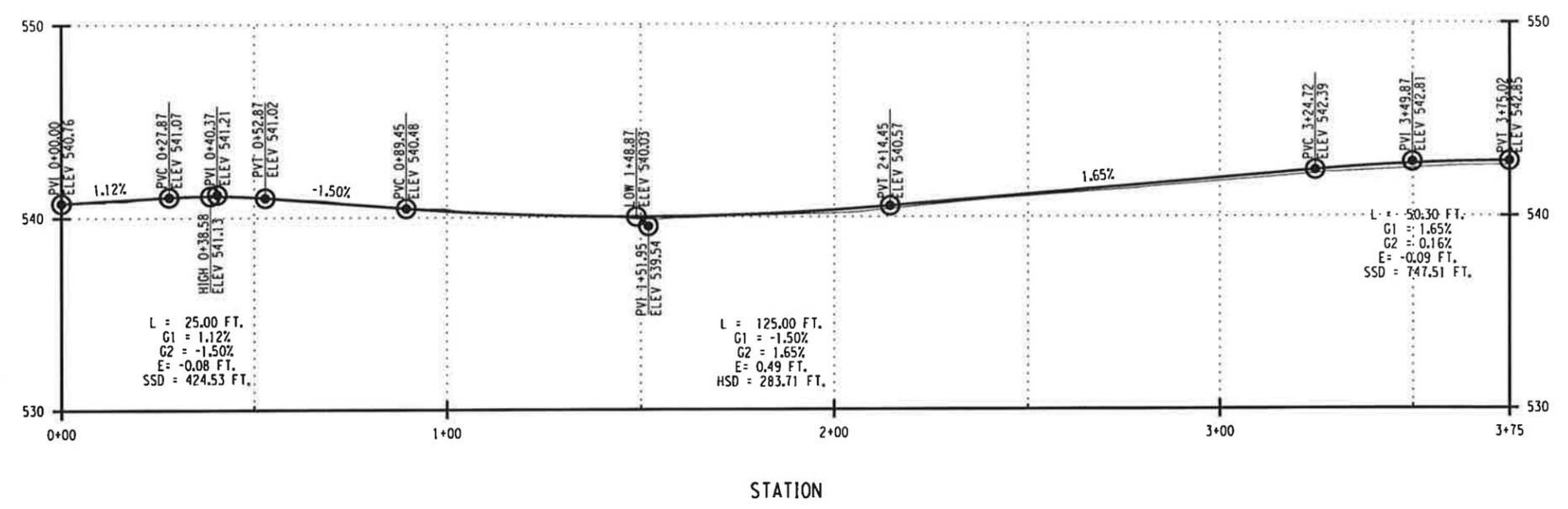
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 DATE/TIME : 2/5/2015  
 USER : 918805 AM

PROJECT MANAGER: T. WOODBURY  
 CHECK: A. BALANEVSKIY  
 DESIGN: B. CARLSON  
 JOB MANAGER:  
 DESIGN SUPERVISOR:

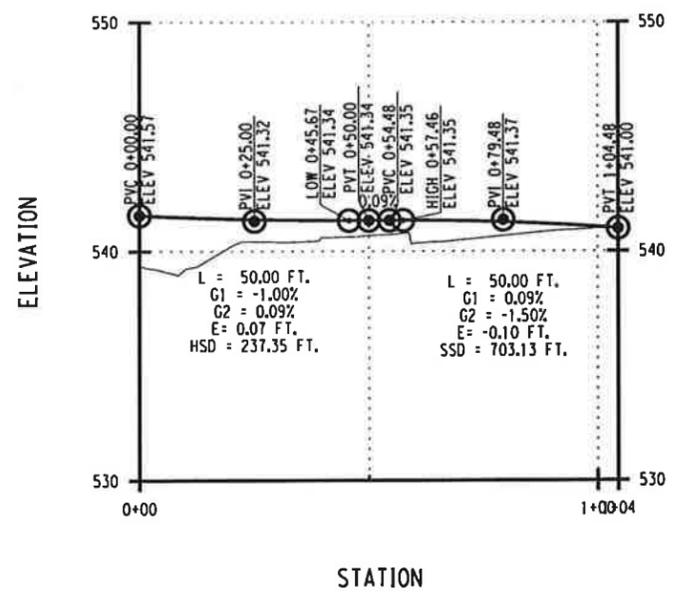
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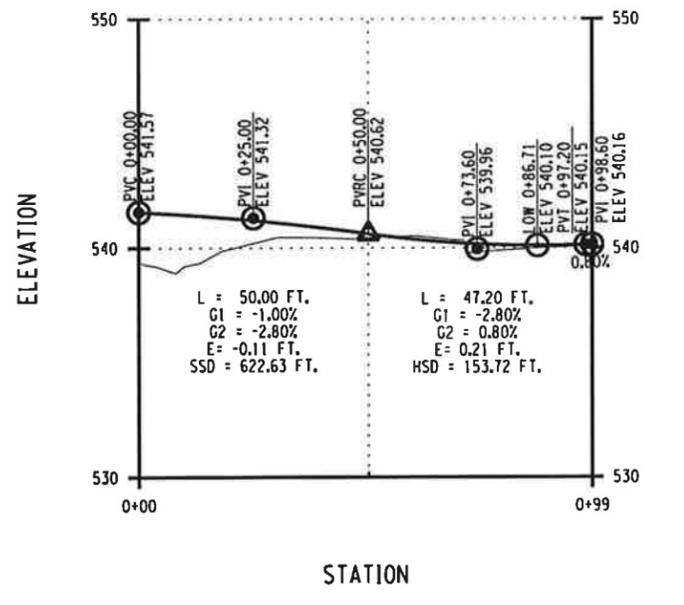
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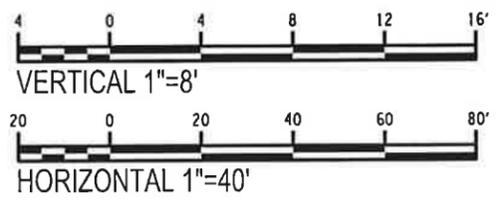
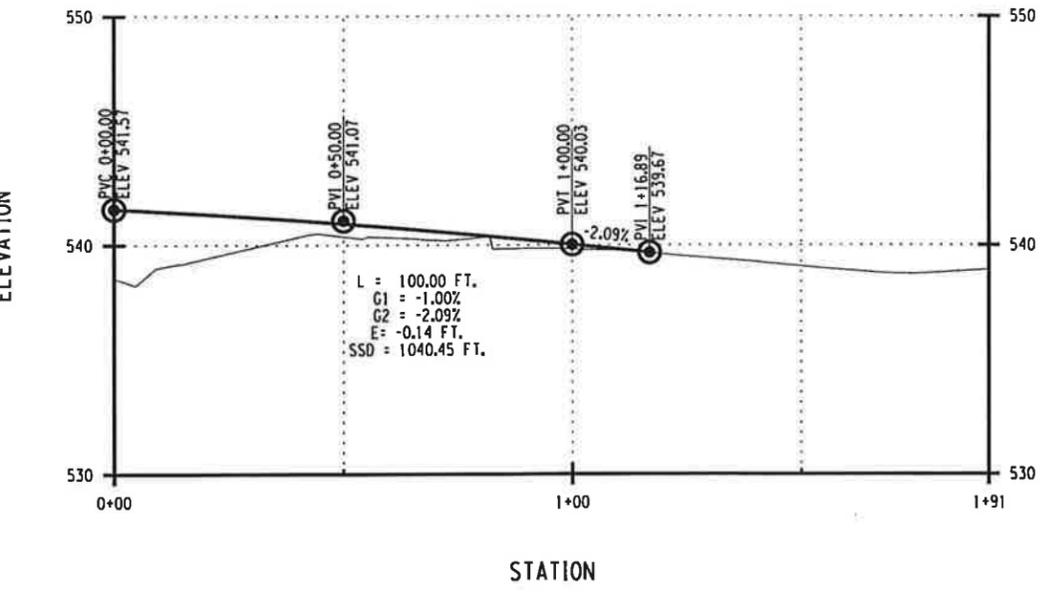
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NORTH BOUND LANE.AC.P

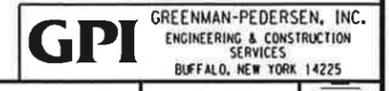


SOUTH BOUND LANE.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - PRECAST CONCRETE ARCH	DRAWING NO. A-10
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	



SHEET NO. 8

NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

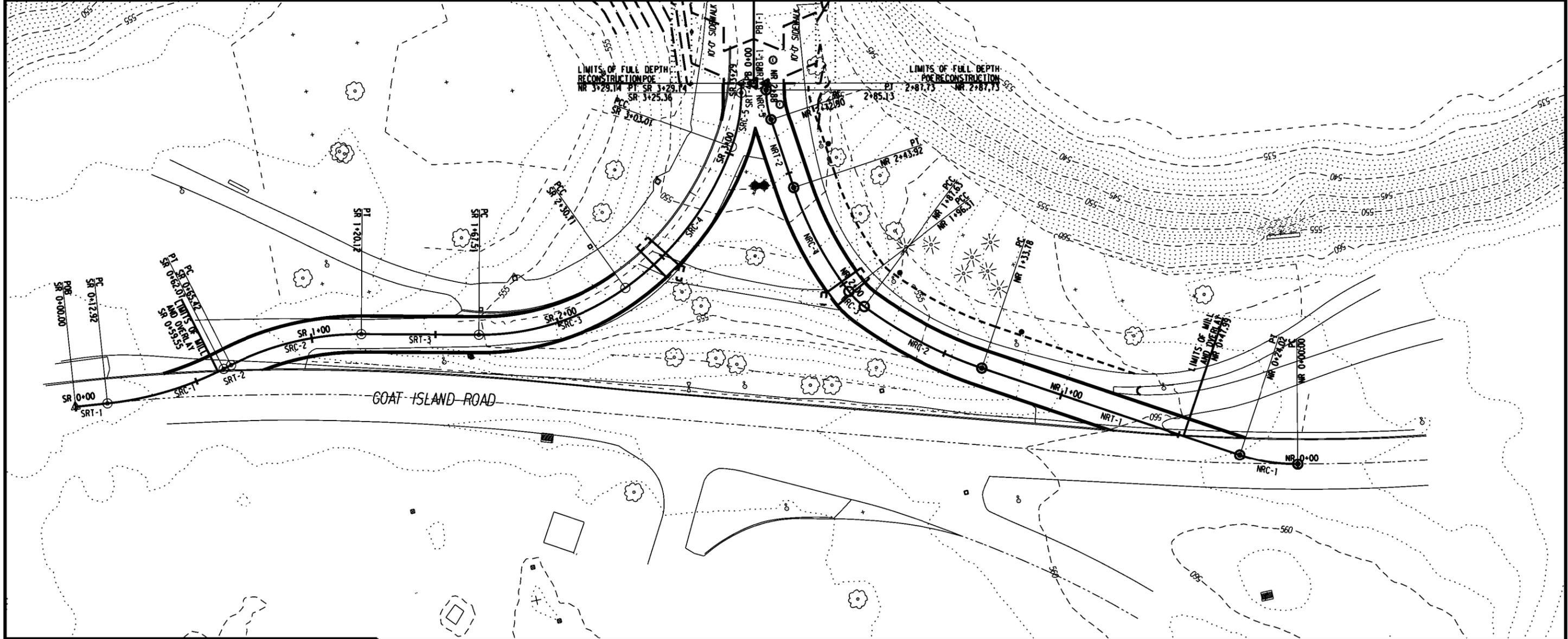
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 OFFSET 5.0'  
 NR 2+88  
 SR 3+29

GRID NORTH



MATCHLINE SEE SHEET TWO

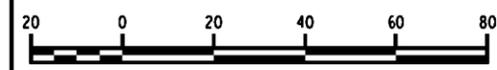
MATCHLINE SEE SHEET TWO



PROJECT MANAGER: I. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

FILE NAME: 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME: 9/22/2015  
 USER: 23458 PM

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES	PIN 576040
COUNTY: NIAGARA	

BRIDGES 5522000 5522010	CULVERTS NONE
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ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
GENERAL PLAN- CONCRETE HAUNCHED GIRDER	
	DRAWING NO. A-11
	SHEET NO. 1

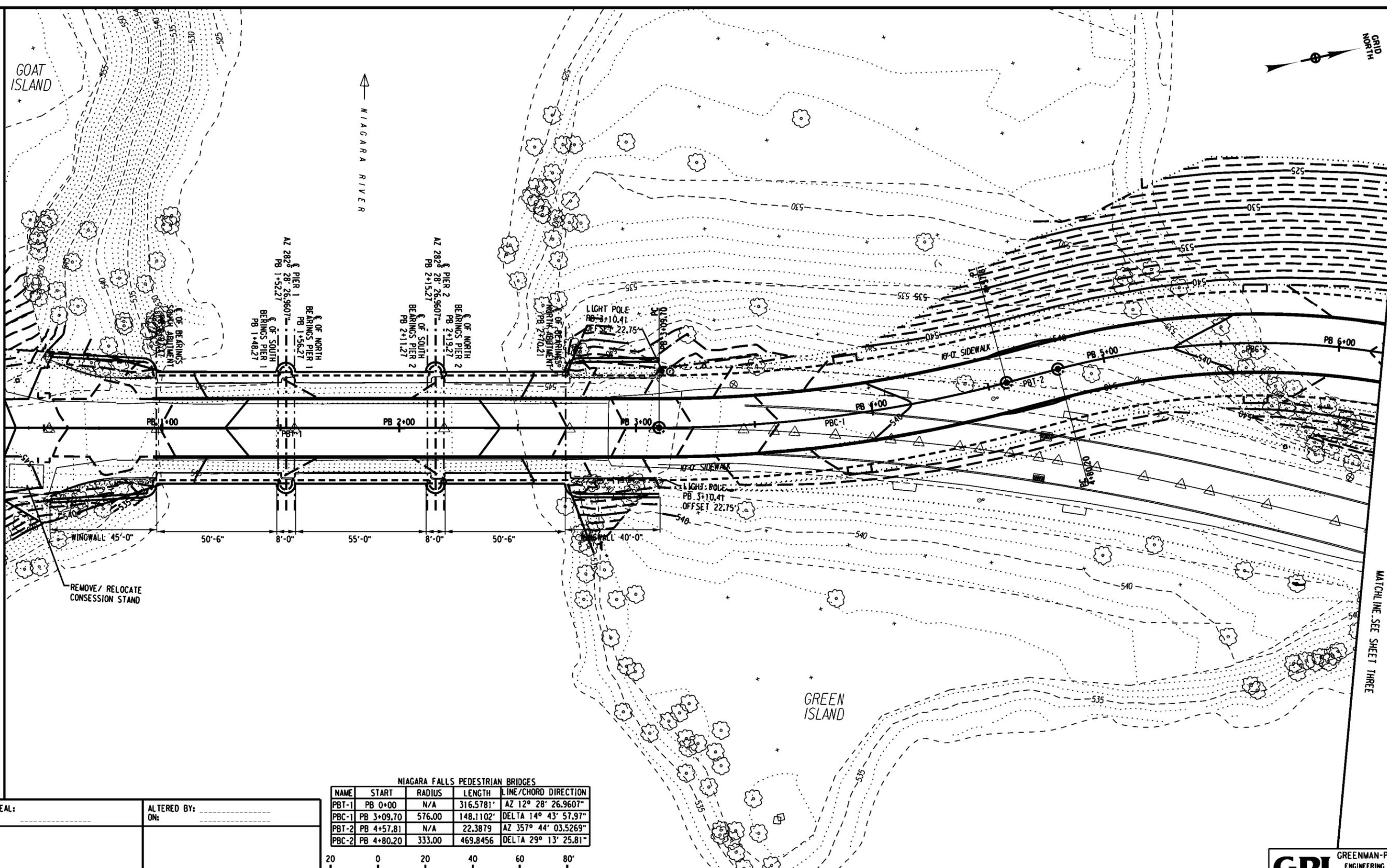
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

MATCHLINE SEE SHEET ONE

MATCHLINE SEE SHEET THREE



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+09.70	576.00	148.1102'	DELTA 14° 43' 57.97"
PBT-2	PB 4+57.81	N/A	22.3879	AZ 357° 44' 03.5269"
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- CONCRETE HAUNCHED GIRDER

CONTRACT NUMBER

DRAWING NO. A-11

SHEET NO. 2



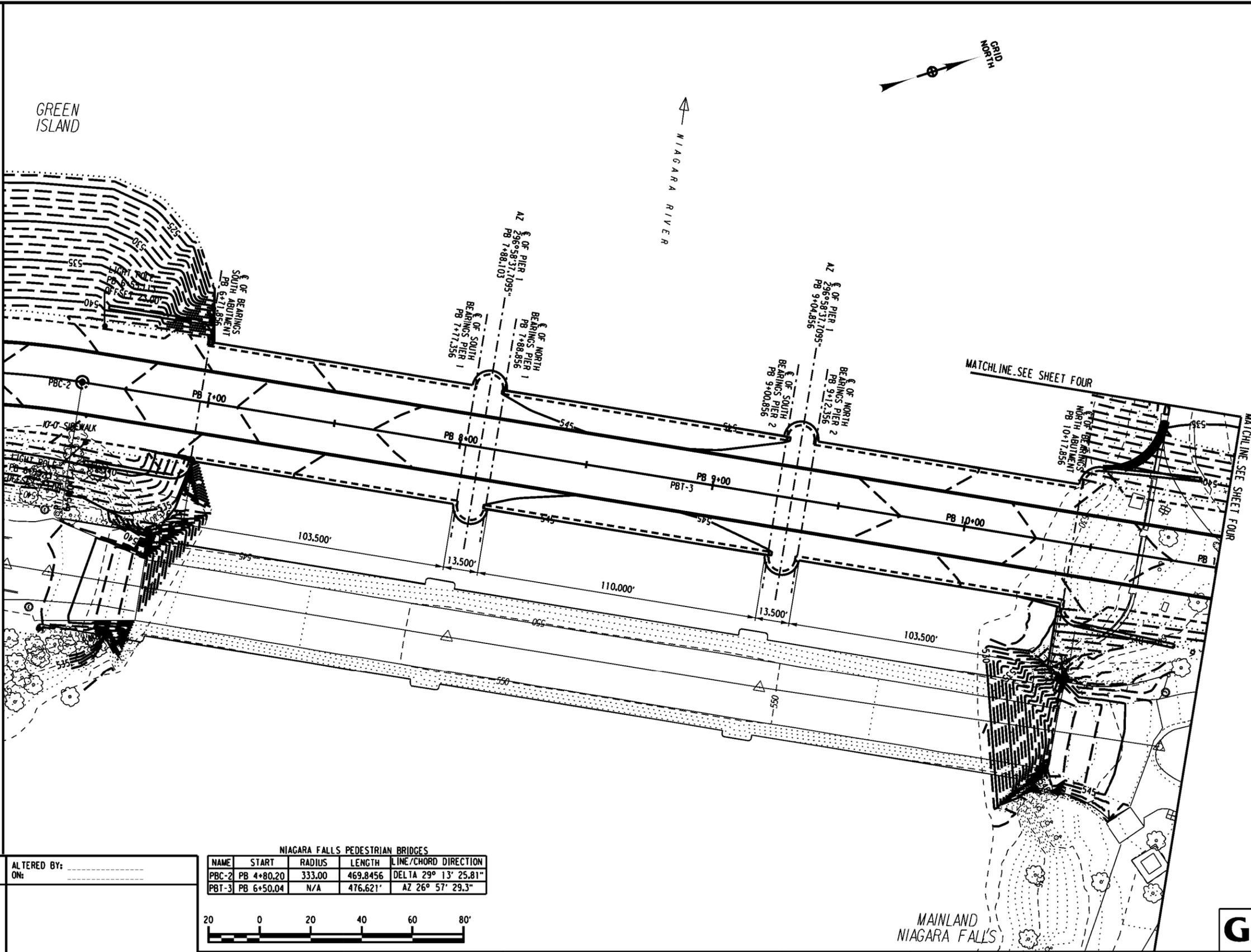
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME = 9/22/2015  
 USER = 2:36:38 PM

DESIGN SUPERVISOR: \_\_\_\_\_ JOB MANAGER: \_\_\_\_\_ DESIGNER: B. CARLSON CHECK: \_\_\_\_\_ DRAFTER: A. BALANEVSKIY CHECK: \_\_\_\_\_ PROJECT MANAGER: I. WOODBURY

MATCHLINE: SEE SHEET TWO



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"
PBT-3	PB 6+50.04	N/A	476.621'	AZ 26° 57' 29.3"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_  
 ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES  
 5522000  
 5522010  
 CULVERTS  
 NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
 GENERAL PLAN- CONCRETE HAUNCHED GIRDER

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

CONTRACT NUMBER \_\_\_\_\_  
 DRAWING NO. A-11  
 SHEET NO. 3

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

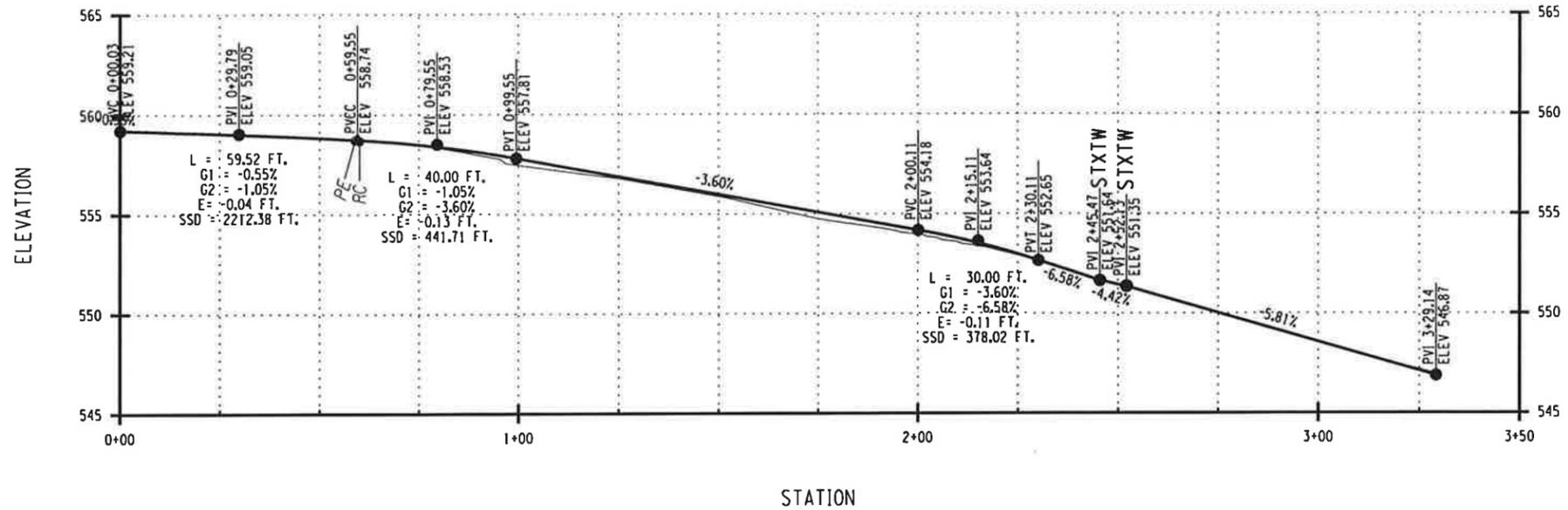
NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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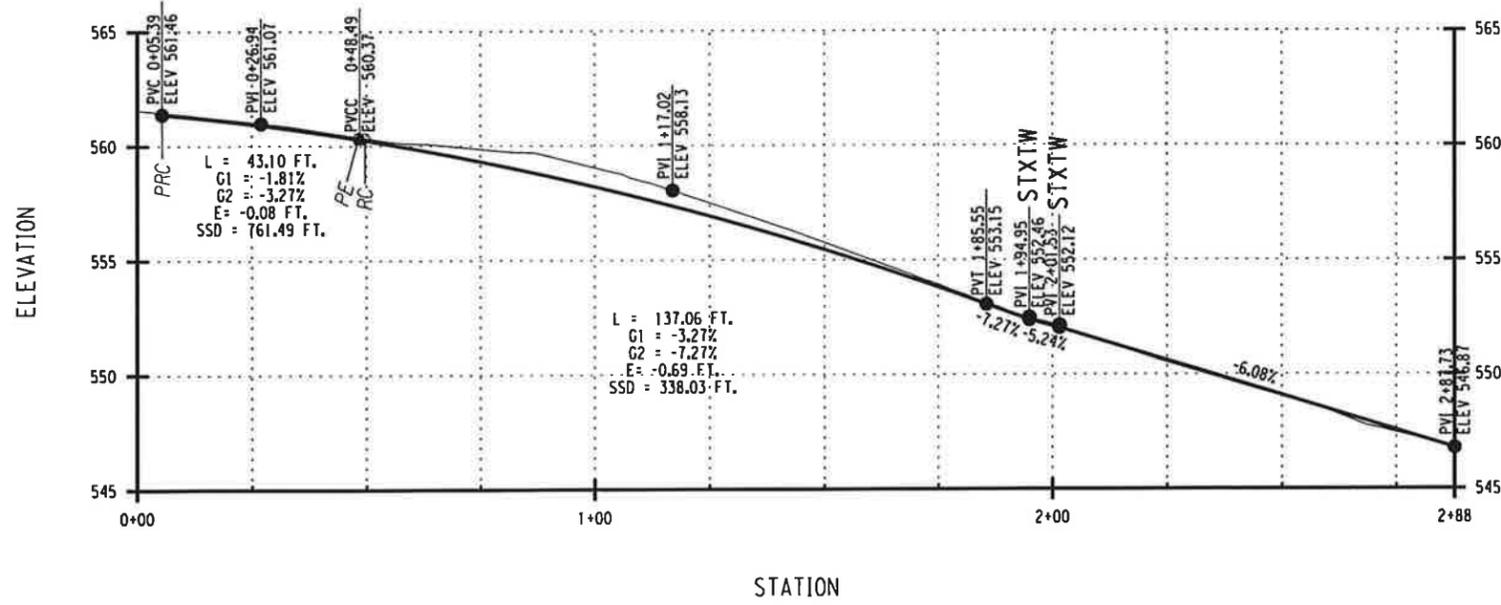
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PROJECT MANAGER: I. WOODBURY  
 DRAFTING: A. BALANEYSKIY  
 DESIGN: B. CARLSON  
 JOB MANAGER

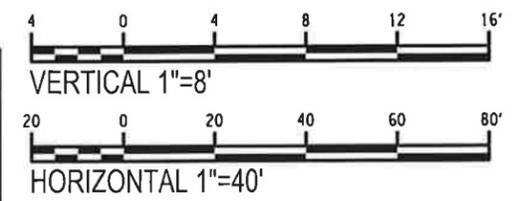
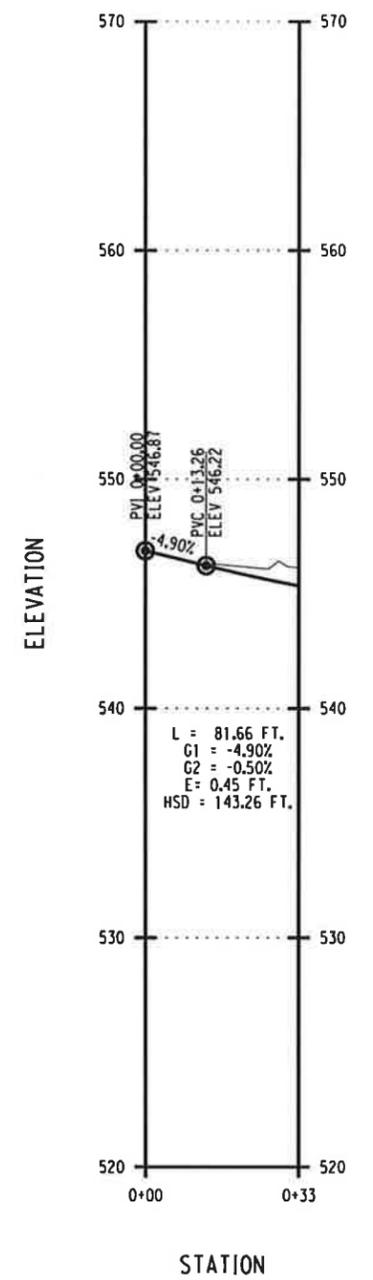
WEST GOAT ISLAND ROAD.AC.P



EAST GOAT ISLAND ROAD.AC.P



ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: ON:	ALTERED BY: ON:
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
AMERICAN FALLS BRIDGES	
COUNTY: NIAGARA	

BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
PIN 576040		PROFILE - CONCRETE HAUNCHED GIRDER	DRAWING NO. A-11
SHEET NO. 5		SHEET NO. 5	
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.		NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	



FILE NAME = 576040.rpt.ddr.General Plans and Profiles.dgn  
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DESIGN SUPERVISOR

DESIGN B. CARLSON

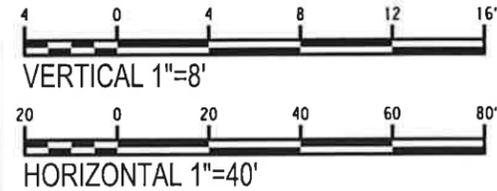
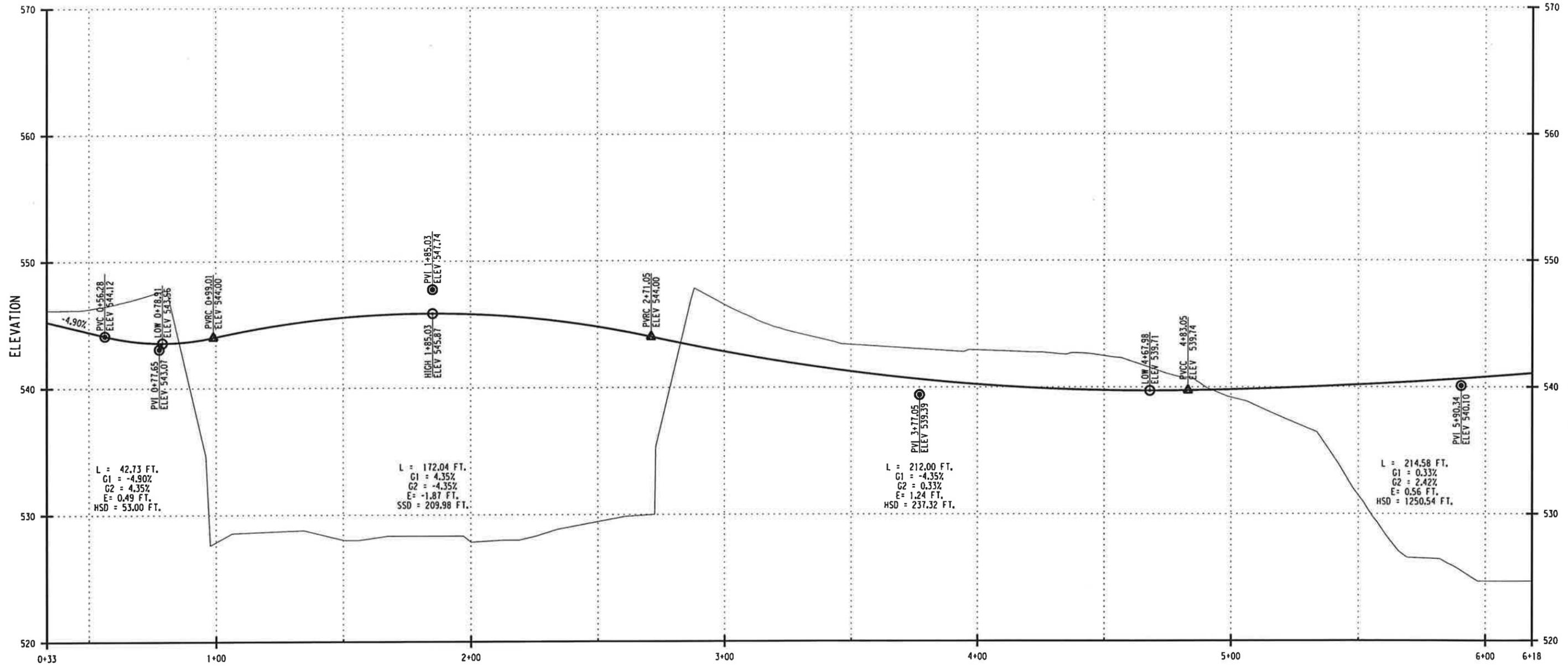
CHECK

DRAFTING A. BALANEVSKIY

CHECK

PROJECT MANAGER T. WOODBURY

ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL:  
ON: \_\_\_\_\_

ALTERED BY:  
ON: \_\_\_\_\_

AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
COUNTY: NIAGARA

PIN 576040

BRIDGES  
5522000  
5522010

CULVERTS  
NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
PROFILE - CONCRETE HAUNCHED GIRDER  
CONTRACT NUMBER  
DRAWING NO. A-11  
SHEET NO. 6



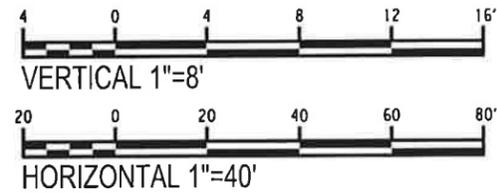
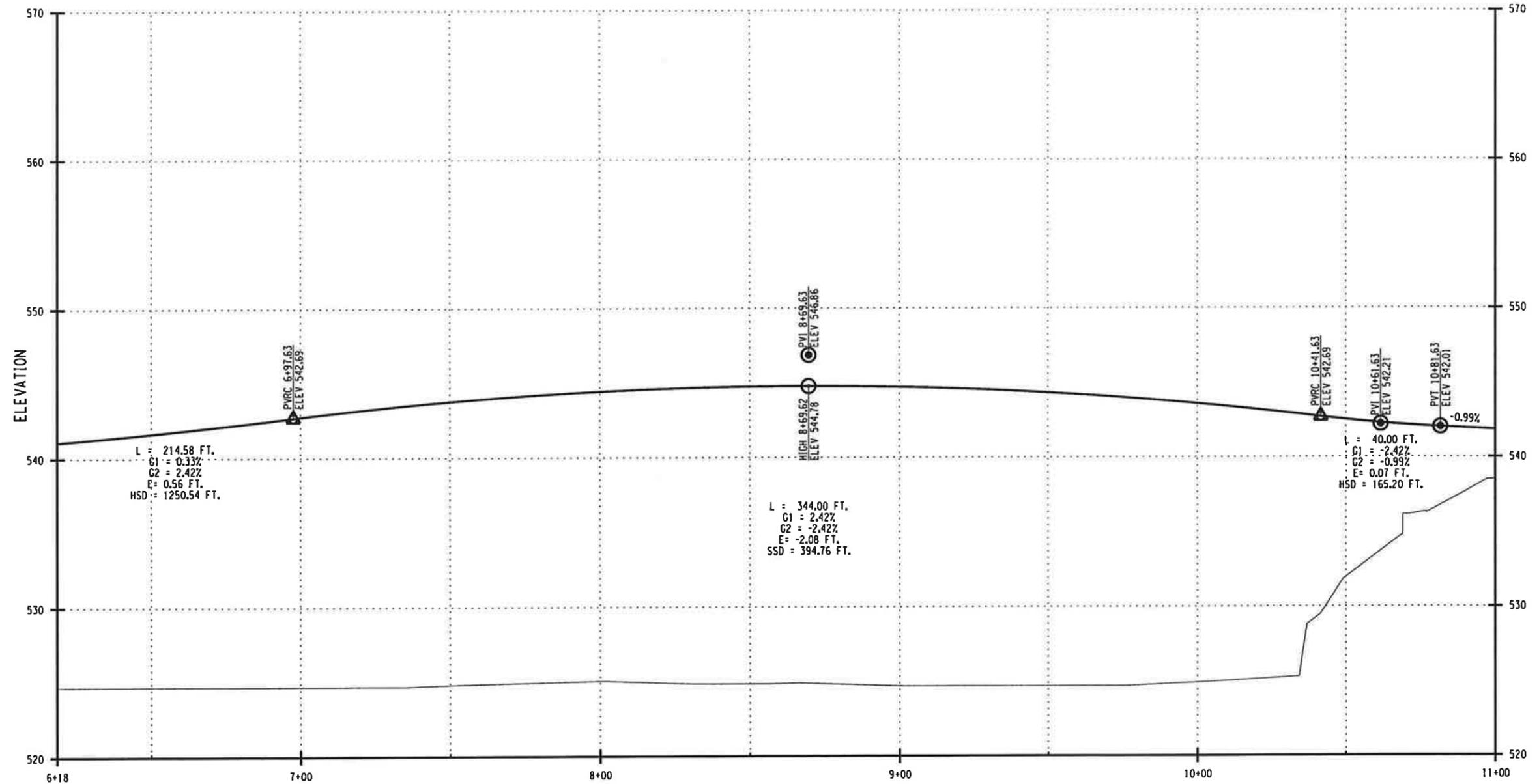
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

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 USER =

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR

ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: _____ ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - CONCRETE HAUNCHED GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-11
						SHEET NO. 7



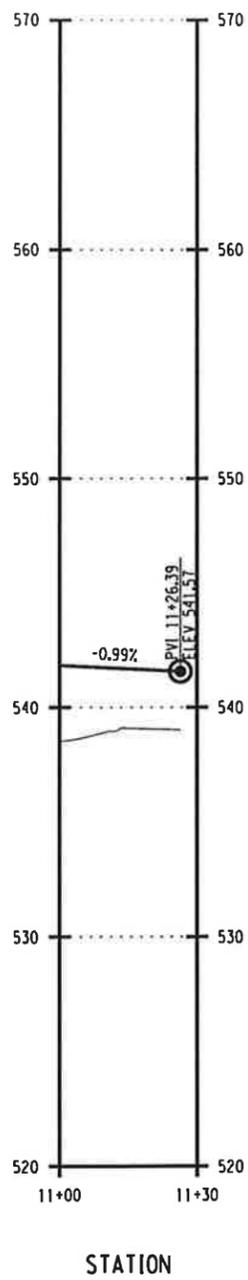
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

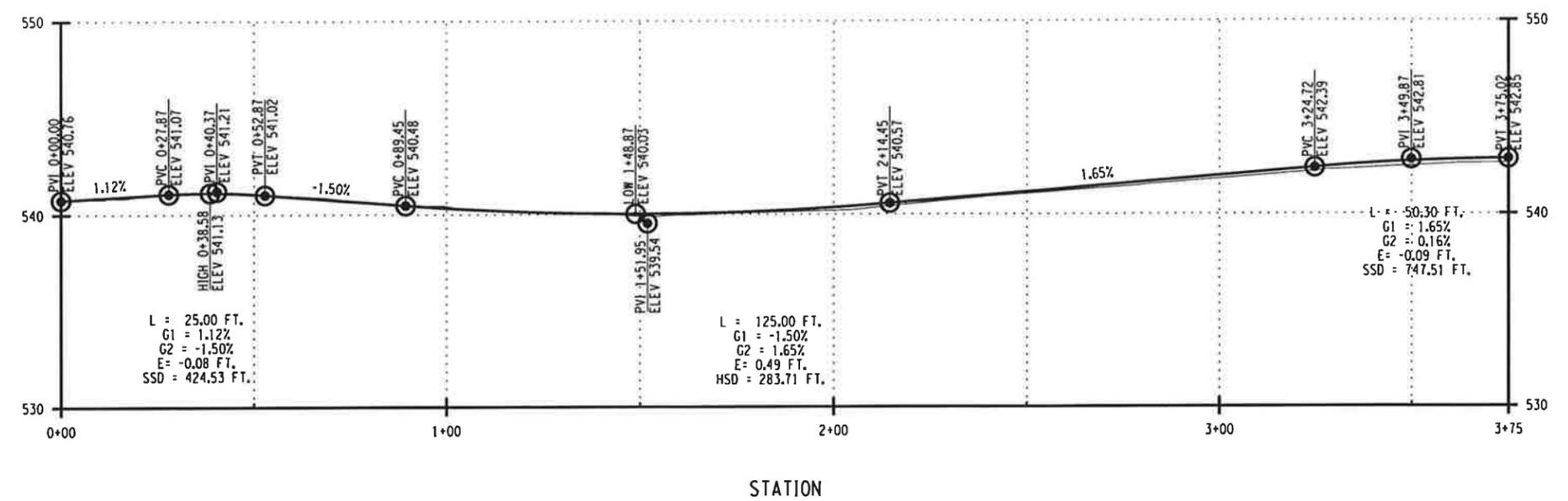
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 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

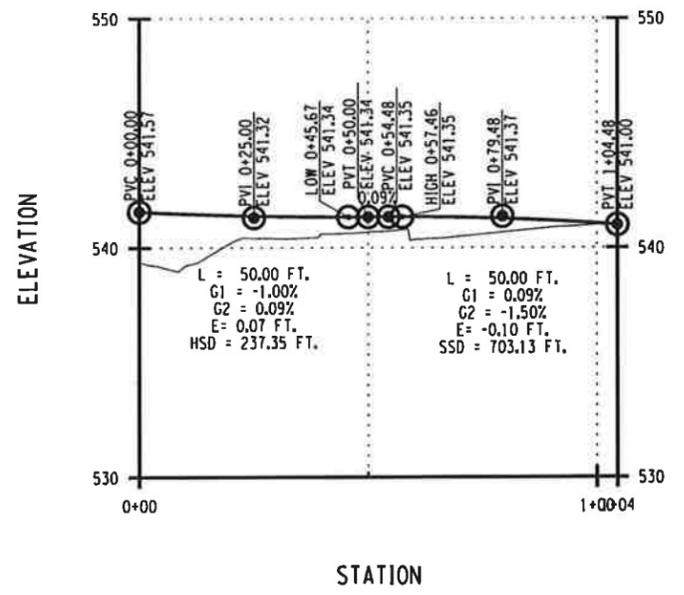
ALTERNATE ALIGNMENT.AC.P



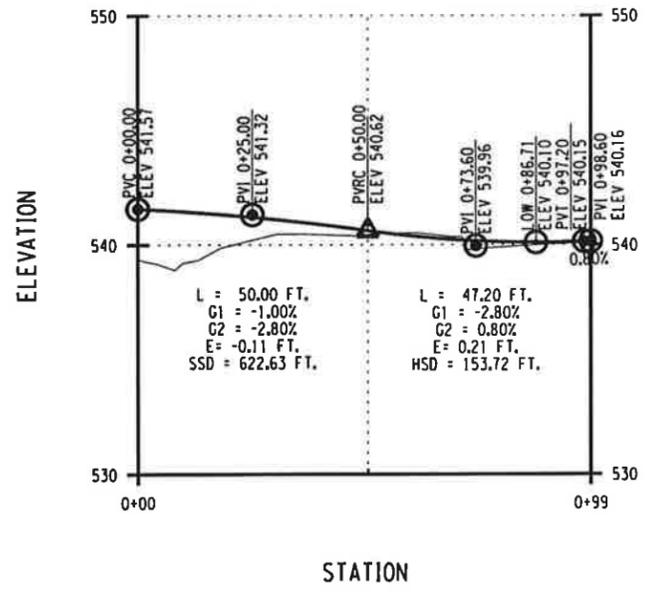
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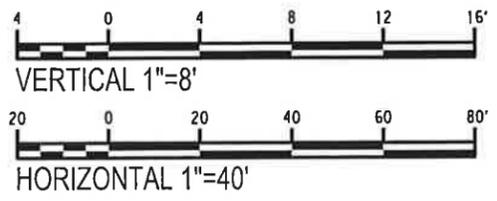
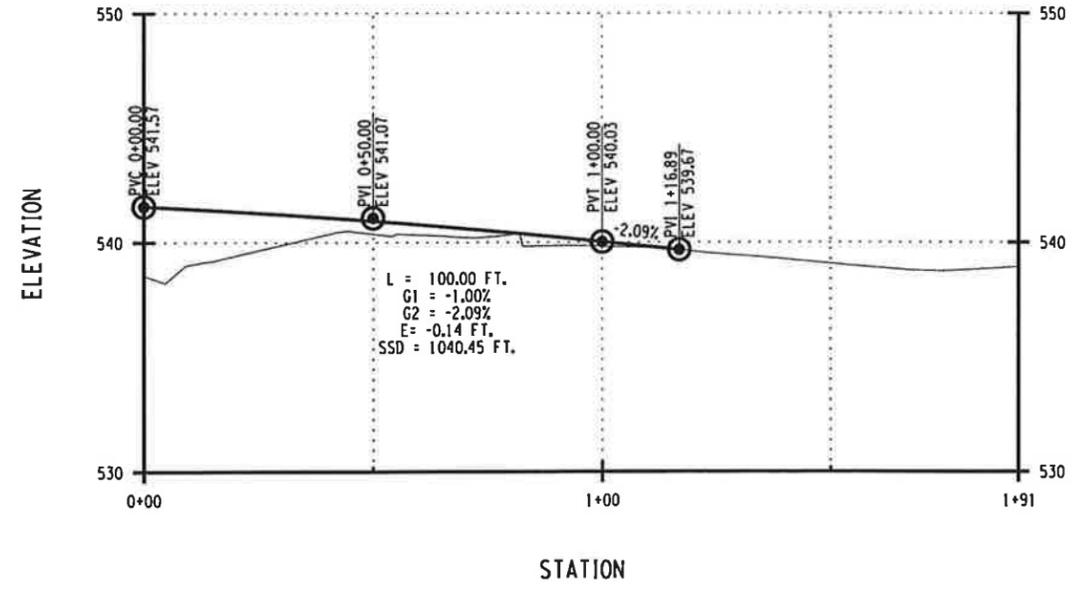
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NORTH BOUND LANE.AC.P



SOUTH BOUND LANE.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - CONCRETE HAUNCHED GIRDER	DRAWING NO. A-11 SHEET NO. 8

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

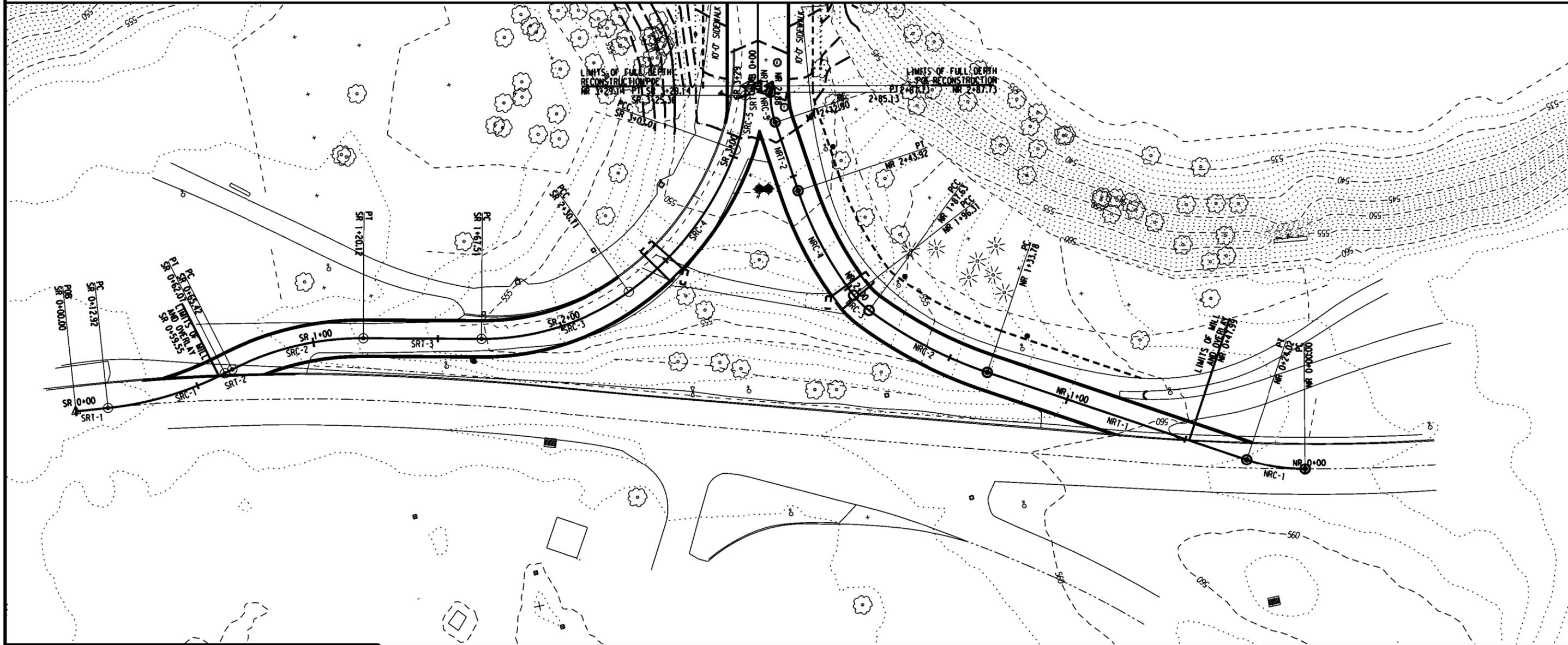
PB 0+00  
OFFSET 5.0'  
NR 2+88  
SR 3+29

GRID NORTH



MATCHLINE-SEE SHEET TWO

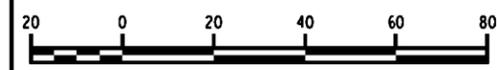
MATCHLINE-SEE SHEET TWO



PROJECT MANAGER: T. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

FILE NAME: 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME: 9/22/2015  
 USER: 2:39:12 PM

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS  
DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES

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COUNTY: NIAGARA

PIN 576040

BRIDGES  
5522000  
5522010

CULVERTS  
NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

GENERAL PLAN- STEEL TIED ARCH



CONTRACT NUMBER

DRAWING NO. A-12

SHEET NO. 1

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.ddr-General Plans and Profiles.dgn  
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DESIGN SUPERVISOR

JOB MANAGER

CHECK

DESIGN B. CARLSON

CHECK

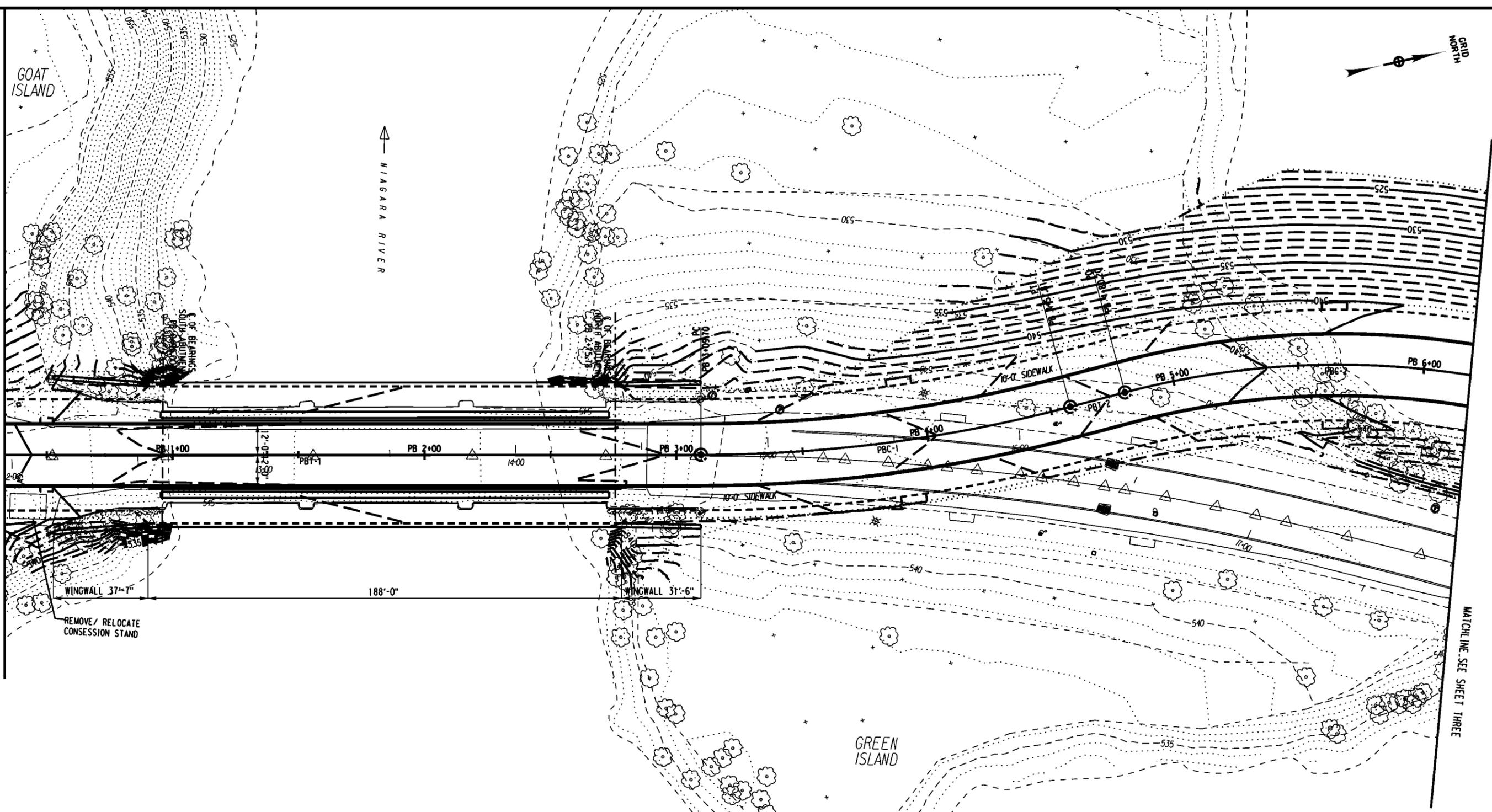
DRAFTING A. BALANEVSKIY

CHECK

PROJECT MANAGER T. WOODBURY

MATCHLINE SEE SHEET ONE

MATCHLINE SEE SHEET THREE



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+09.70	576.00	148.1102'	DELTA 14° 43' 57.97"
PBT-2	PB 4+57.81	N/A	22.3879	AZ 357° 44' 03.5269"
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040
	BRIDGES 5522000 5522010
	CULVERTS NONE
COUNTY: NIAGARA	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- STEEL TIED ARCH	CONTRACT NUMBER
	DRAWING NO. A-12
	SHEET NO. 2

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

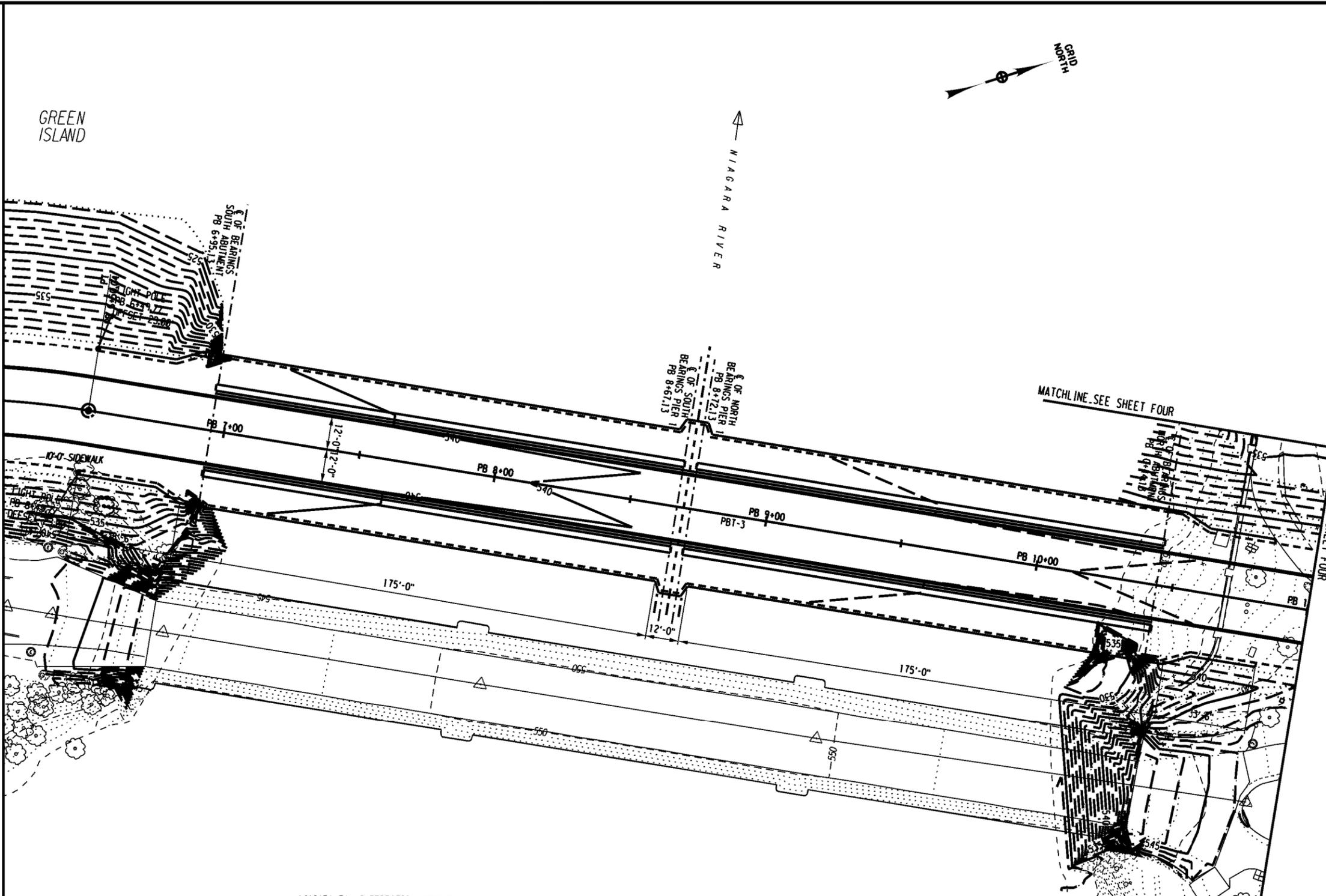
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt.dwg - General Plans and Profiles.dwg  
 DATE/TIME = 9/22/2015  
 USER = 2:40:26 PM

DESIGN SUPERVISOR: \_\_\_\_\_ JOB MANAGER: \_\_\_\_\_ DESIGNER: B. CARLSON CHECK: \_\_\_\_\_ DRAFTER: A. BALANEVSKIY CHECK: \_\_\_\_\_ PROJECT MANAGER: T. WOODBURY

MATCHLINE: SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"
PBT-3	PB 6+50.04	N/A	476.621'	AZ 26° 57' 29.3"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_  
 ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
 GENERAL PLAN- STEEL TIED ARCH

CONTRACT NUMBER  
 DRAWING NO. A-12  
 SHEET NO. 3

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

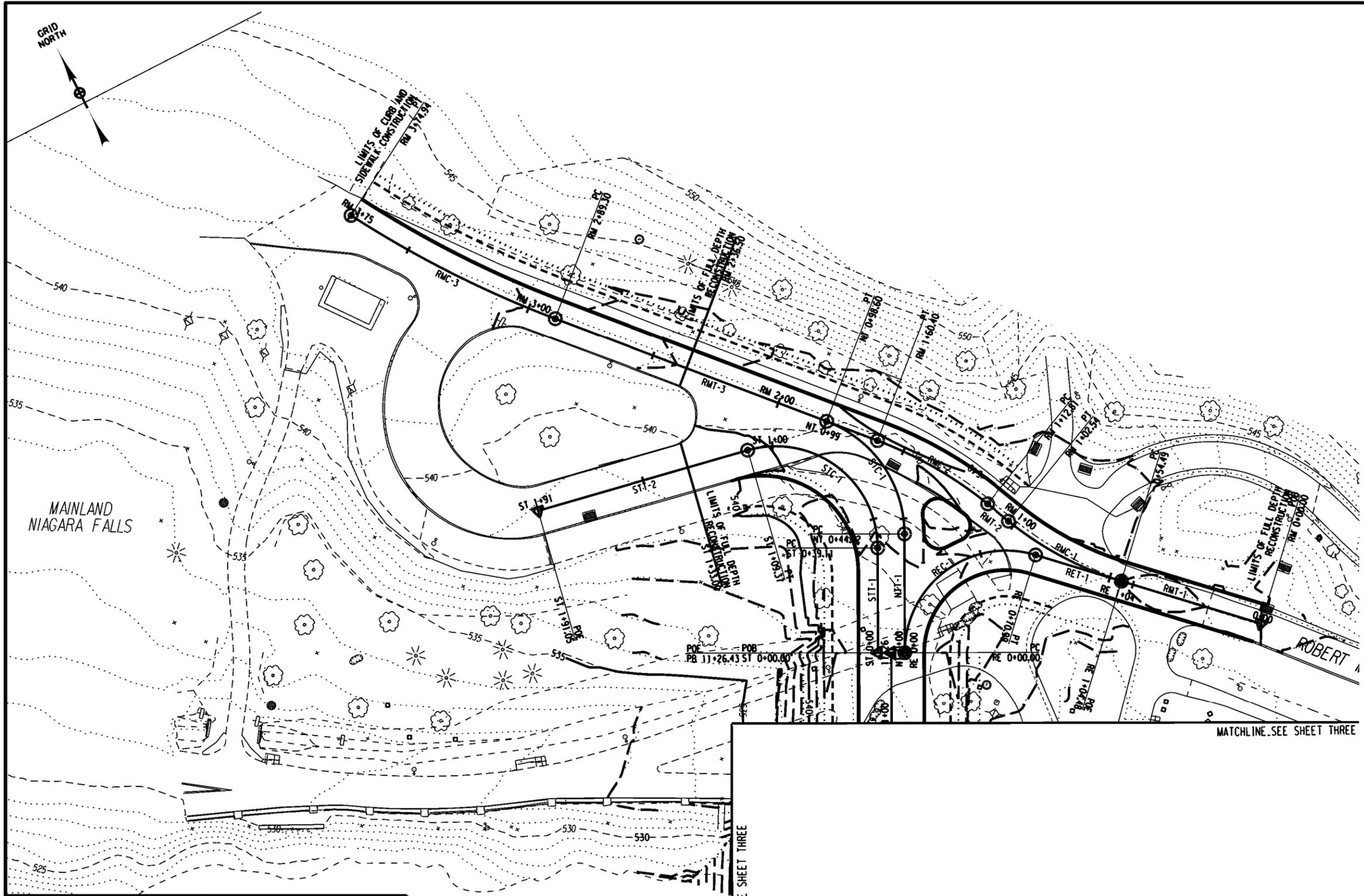
NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

FILE NAME : 576040\_rpt.dwg  
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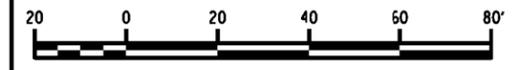
PROJECT MANAGER: T. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-3	PB 6+50.04	N/A	476.6209'	AZ 26° 57' 29.3321"
PB 11+46 OFFSET 5.0' RE 0+00 ST 0+00 NT 0+00				



MATCHLINE SEE SHEET THREE

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES	PIN 576040
BRIDGES 5522000 5522010	CULVERTS NONE
COUNTY: NIAGARA	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- STEEL TIED ARCH	CONTRACT NUMBER
	DRAWING NO. A-12
	SHEET NO. 4



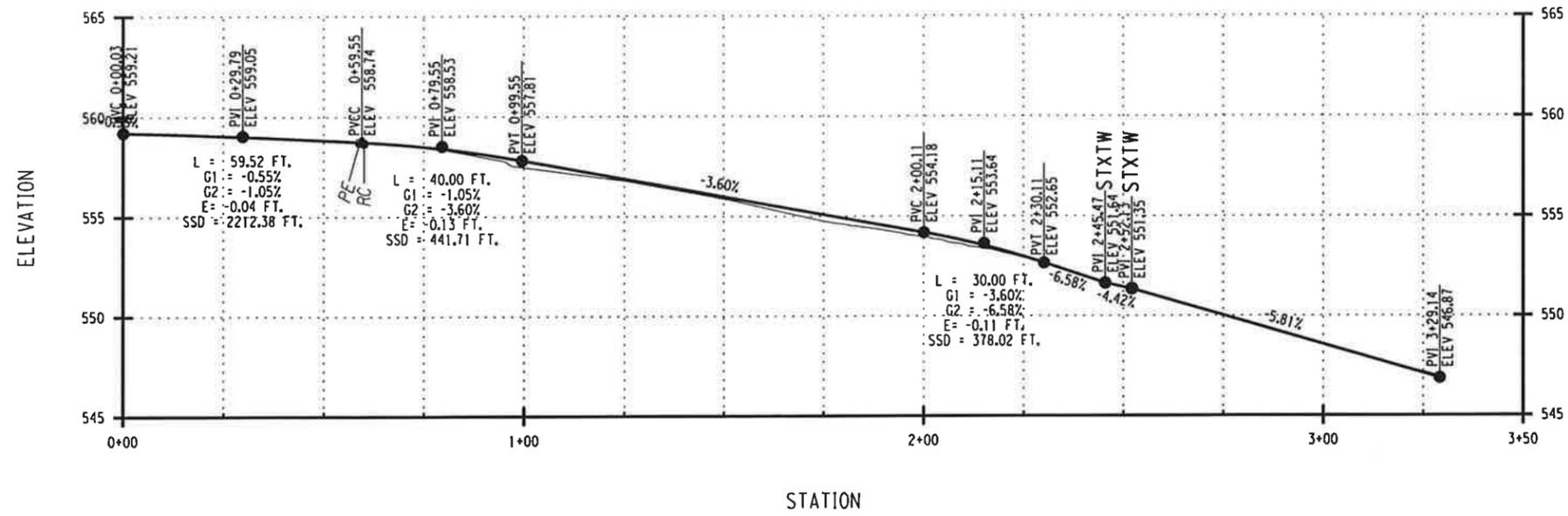
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

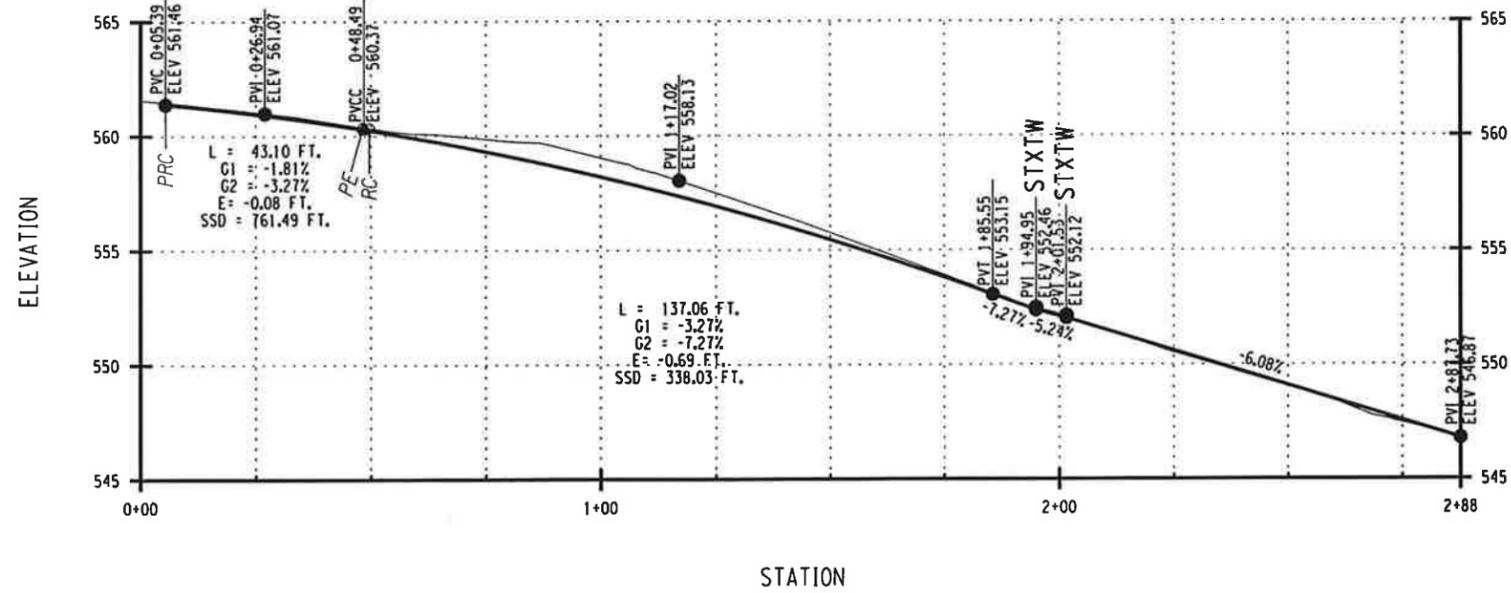
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 DATE/TIME = 4/2/2015  
 USER = 1041127 AM

PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

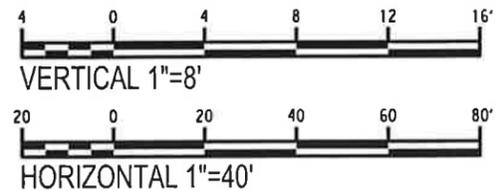
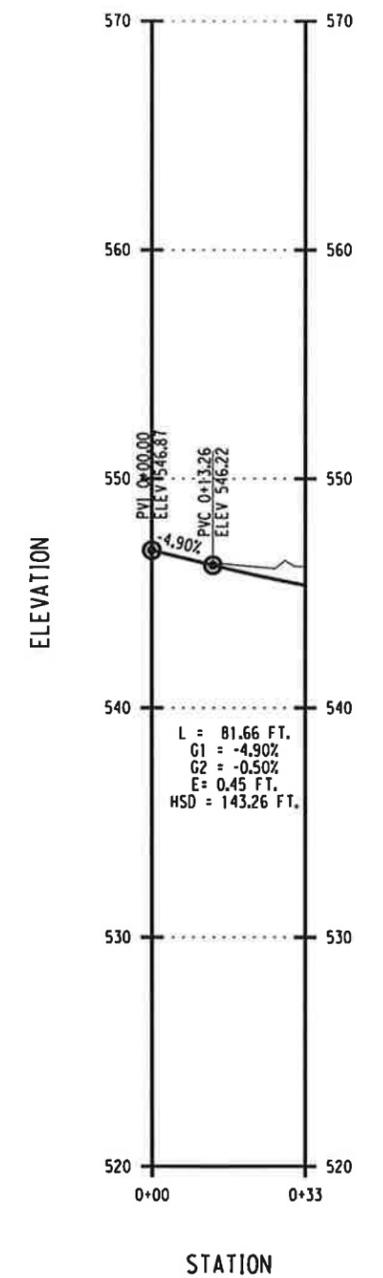
WEST GOAT ISLAND ROAD.AC.P



EAST GOAT ISLAND ROAD.AC.P



ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

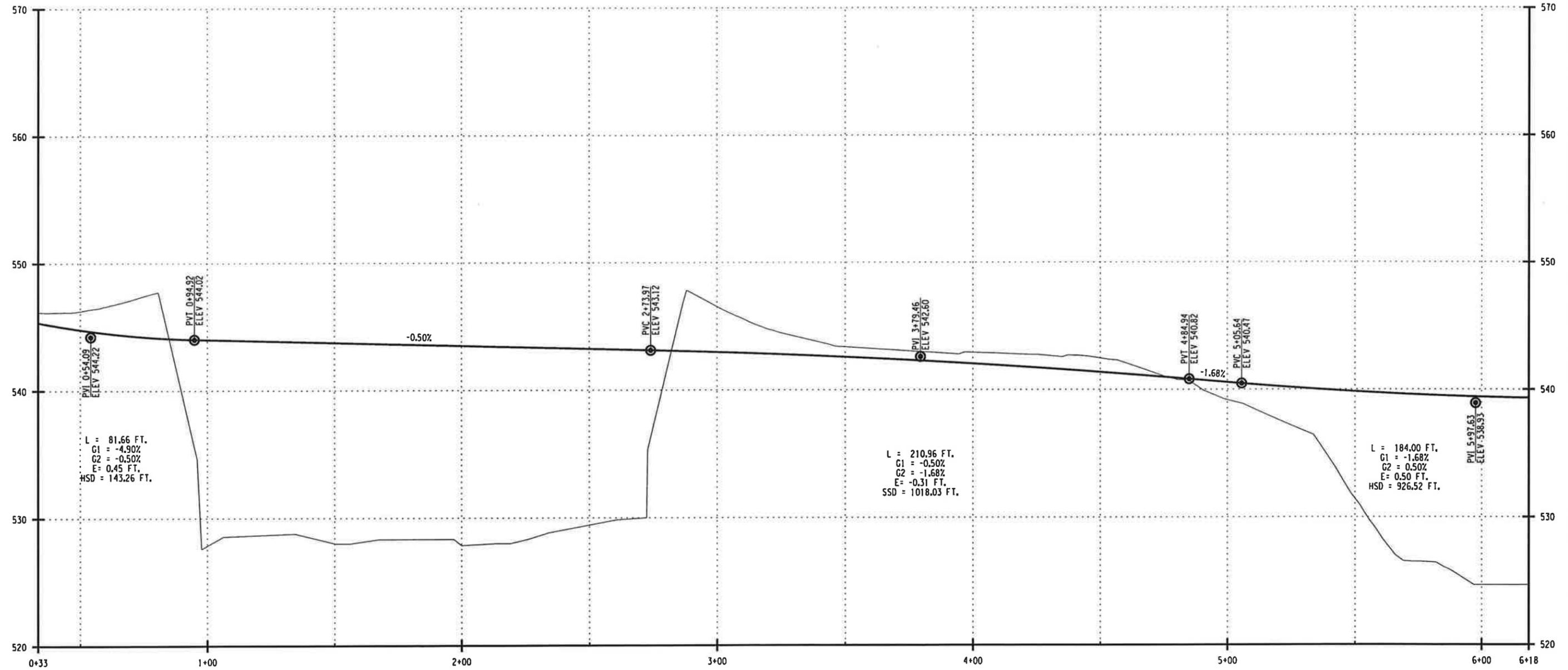
AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - CONCRETE HAUNCHED GIRDER	DRAWING NO. A-12
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				SHEET NO. 5	
NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5				DOCUMENT NAME: DESIGN REPORT	



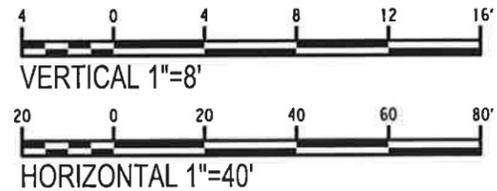
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 USER =

JOB MANAGER: PROJECT MANAGER I. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 DESIGN SUPERVISOR:

ALTERNATE ALIGNMENT.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL TIED ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-12
						SHEET NO. 6

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

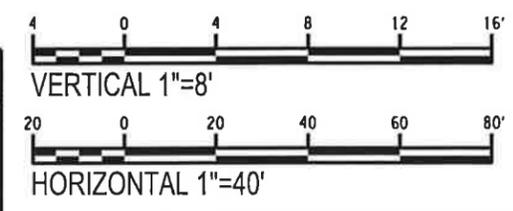
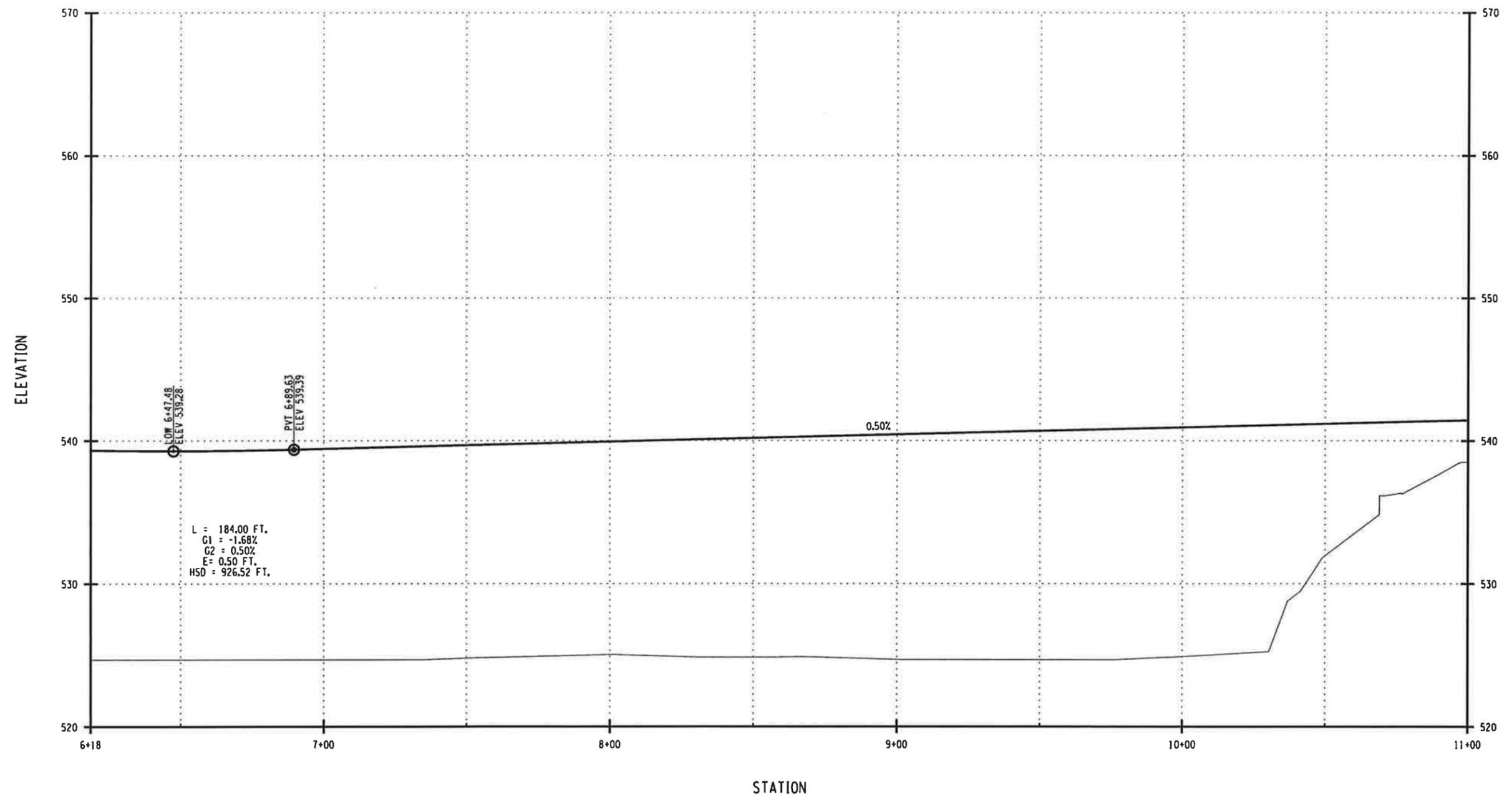
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040\_rpt\_ddr-Genral Plans and Profiles.dgn  
 DATE/TIME = 4/3/2015  
 USER = 4:27:45 PM

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR

ALTERNATE ALIGNMENT\_AC\_P



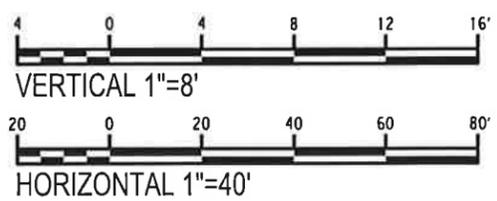
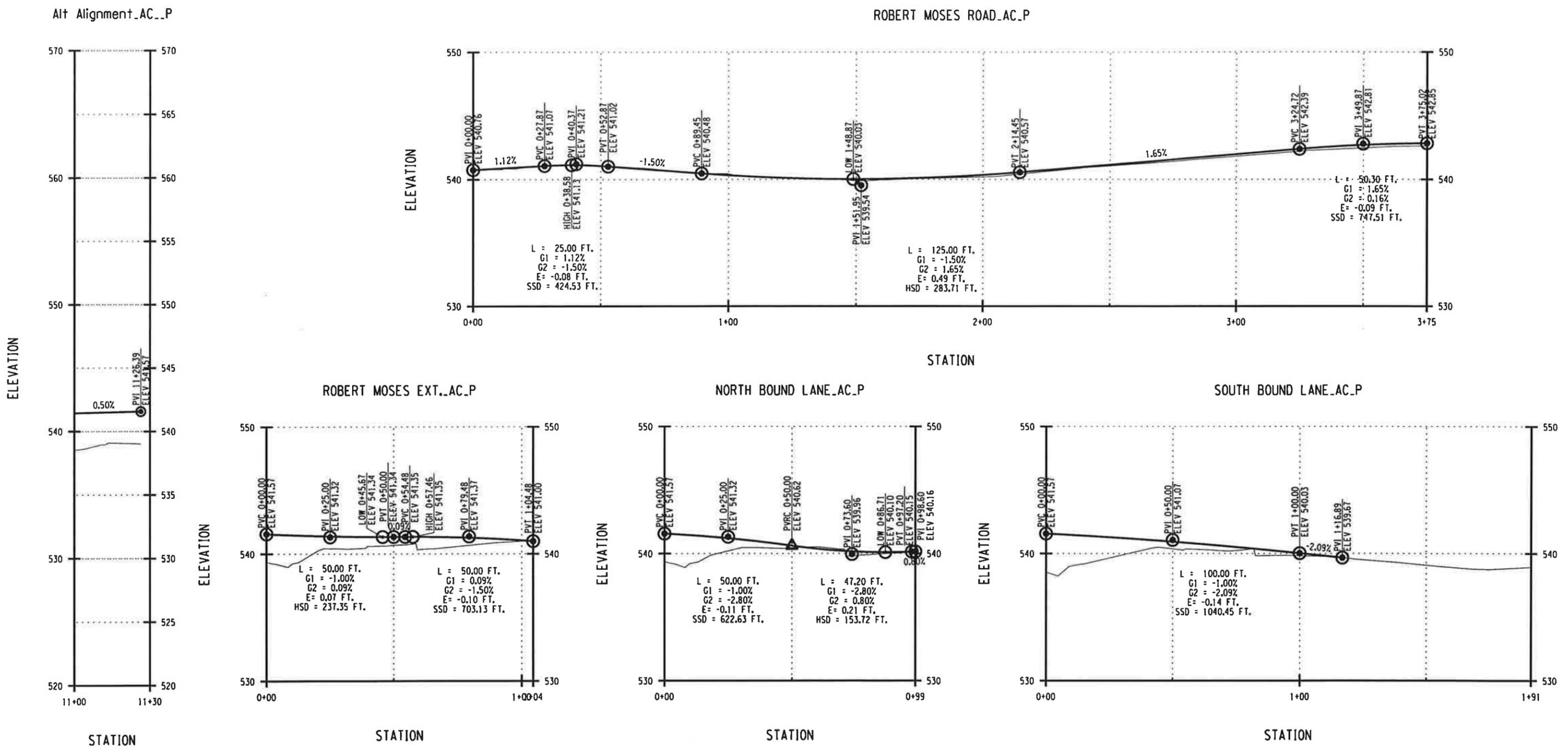
AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL TIED ARCH	
	COUNTY: NIAGARA					DRAWING NO. A-12 SHEET NO. 7
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	



FILE NAME = 576040.rpt.ddr.General Plans and Profiles.dgn  
 DATE/TIME = 4/3/2015  
 USER = 42441 PM

PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - STEEL TIED ARCH	DRAWING NO. A-12
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				SHEET NO. 8	
				NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	



NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"

PB 0+00  
 OFFSET 5.0'  
 NR 2+88  
 SR 3+29

GRID NORTH



MATCHLINE SEE SHEET TWO

MATCHLINE SEE SHEET TWO

PROJECT MANAGER T. WOODBURY

CHECK

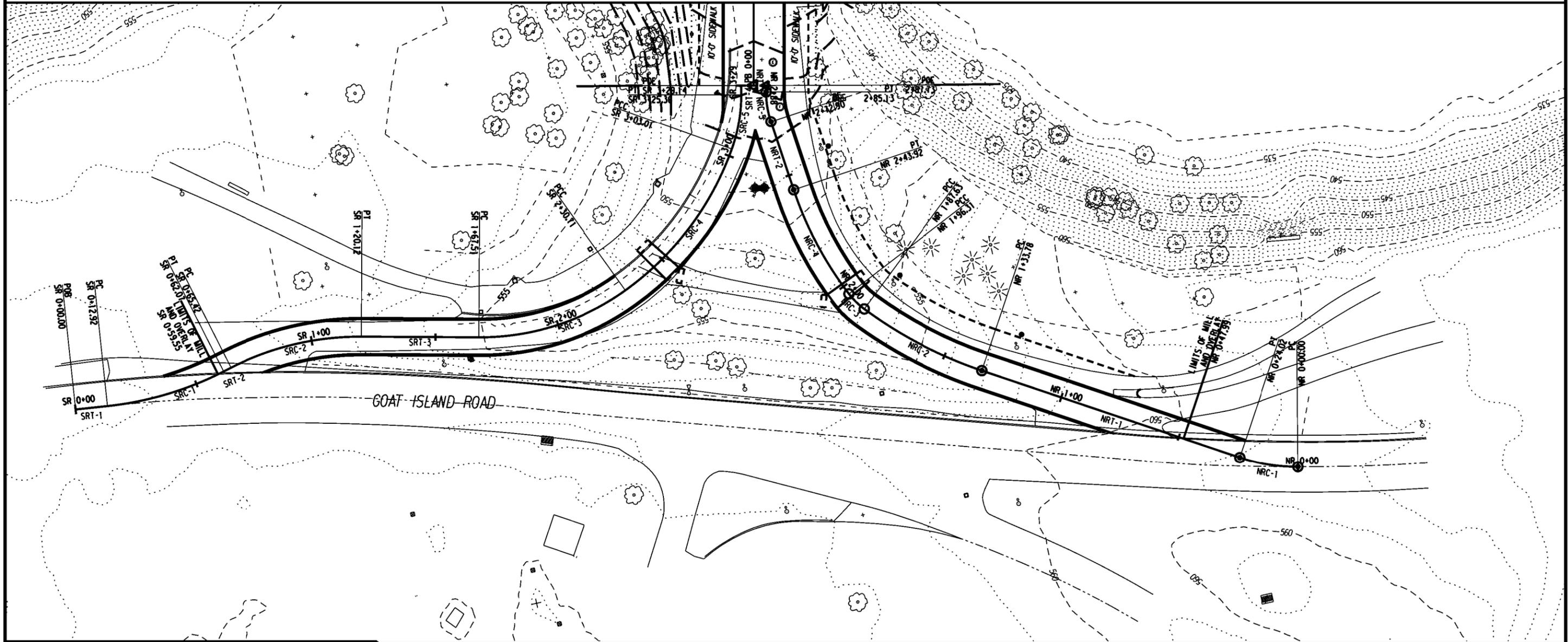
DRAFTING A. BALANEVSKIY

CHECK

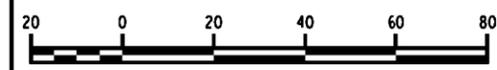
DESIGN B. CARLSON

JOB MANAGER

DESIGN SUPERVISOR



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- STEEL GIRDER

CONTRACT NUMBER  
 DRAWING NO. A-13  
 SHEET NO. 1

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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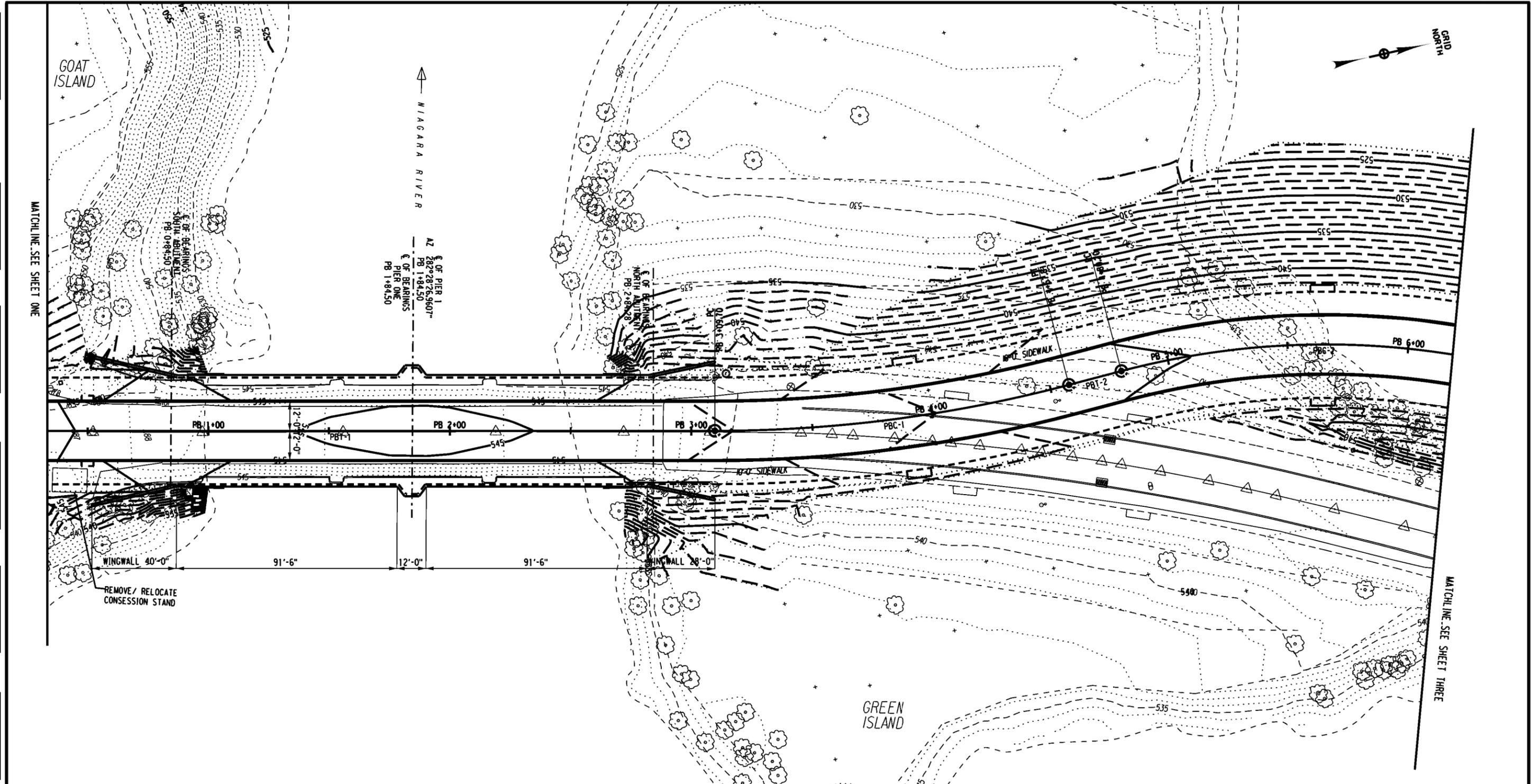
DESIGN B. CARLSON

CHECK

DRAFTING A. BALANEVSKIY

CHECK

PROJECT MANAGER I. WOODBURY



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+09.70	576.00	148.1102'	DELTA 14° 43' 57.97"
PBT-2	PB 4+57.81	N/A	22.3879	AZ 357° 44' 03.5269"
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- STEEL GIRDER

CONTRACT NUMBER \_\_\_\_\_

DRAWING NO. A-13

SHEET NO. 2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

PROJECT MANAGER I. WOODBURY  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 DESIGN SUPERVISOR

MATCHLINE SEE SHEET ONE

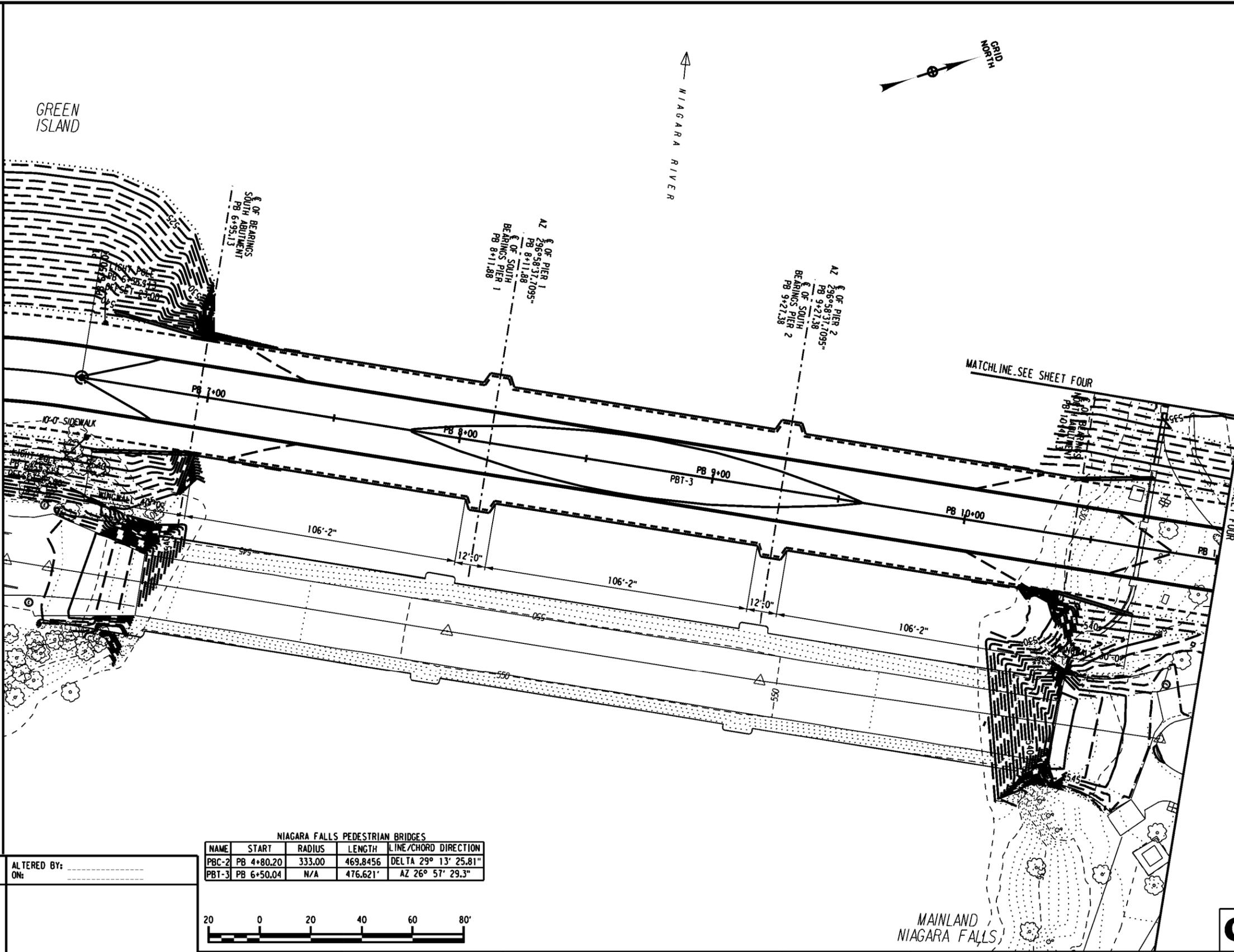
MATCHLINE SEE SHEET THREE



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MATCHLINE: SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"
PBT-3	PB 6+50.04	N/A	476.621'	AZ 26° 57' 29.3"



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_  
 ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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---

AMERICAN FALLS BRIDGES  
 \_\_\_\_\_  
 \_\_\_\_\_  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
 GENERAL PLAN- STEEL GIRDER

CONTRACT NUMBER  
 DRAWING NO. A-13  
 SHEET NO. 3

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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DESIGN SUPERVISOR

JOB MANAGER

CHECK

DESIGN B. CARLSON

CHECK

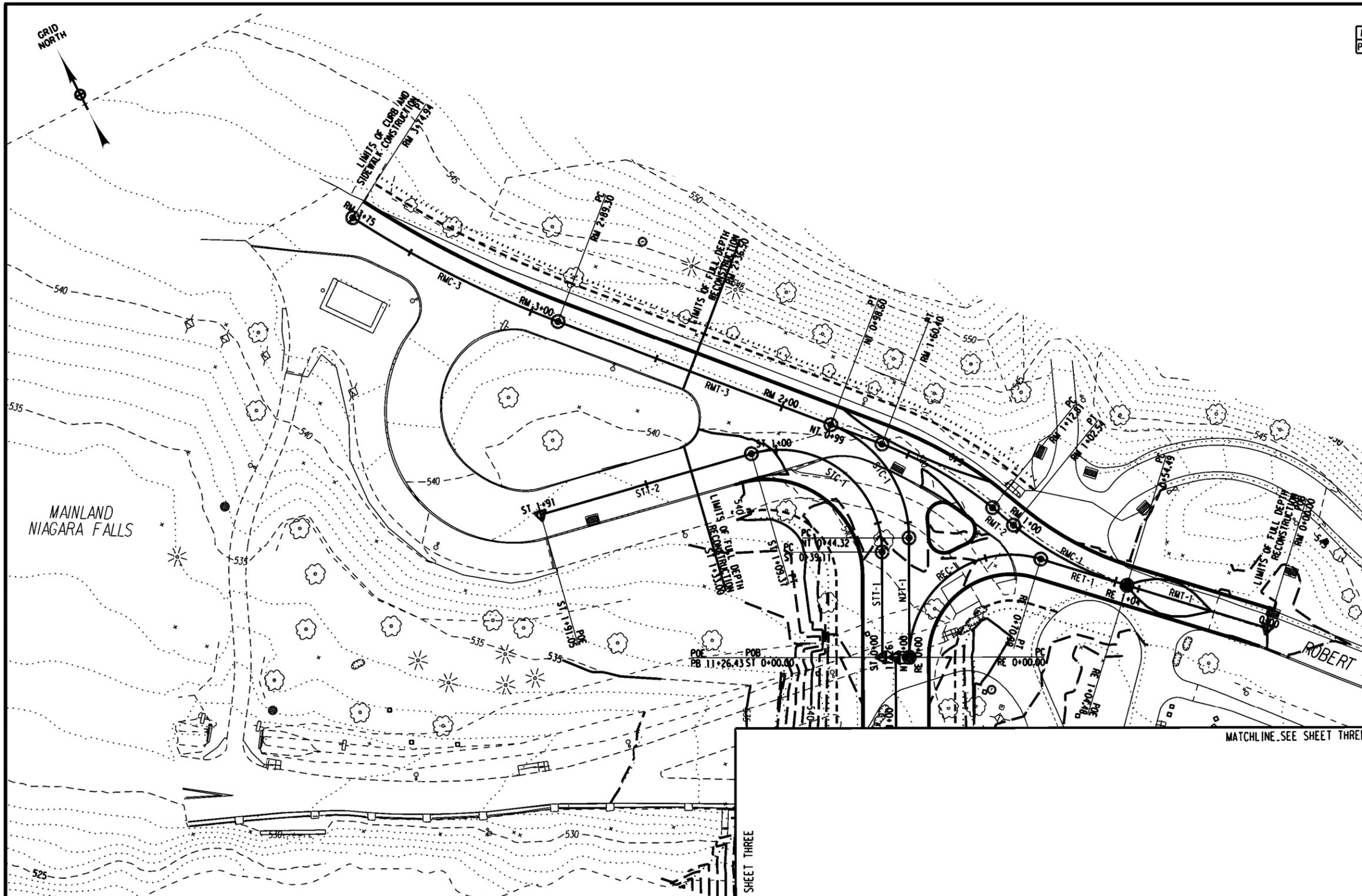
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CHECK

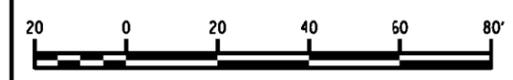
PROJECT MANAGER T. WOODBURY

NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-3	PB 6+50.04	N/A	476.6209'	AZ 26° 57' 29.3321"

PB 11+46  
 OFFSET 5.0'  
 RE 0+00  
 ST 0+00  
 NT 0+00



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES	PIN 576040
BRIDGES 5522000 5522010	CULVERTS NONE
COUNTY: NIAGARA	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- STEEL GIRDER	CONTRACT NUMBER
	DRAWING NO. A-13
	SHEET NO. 4



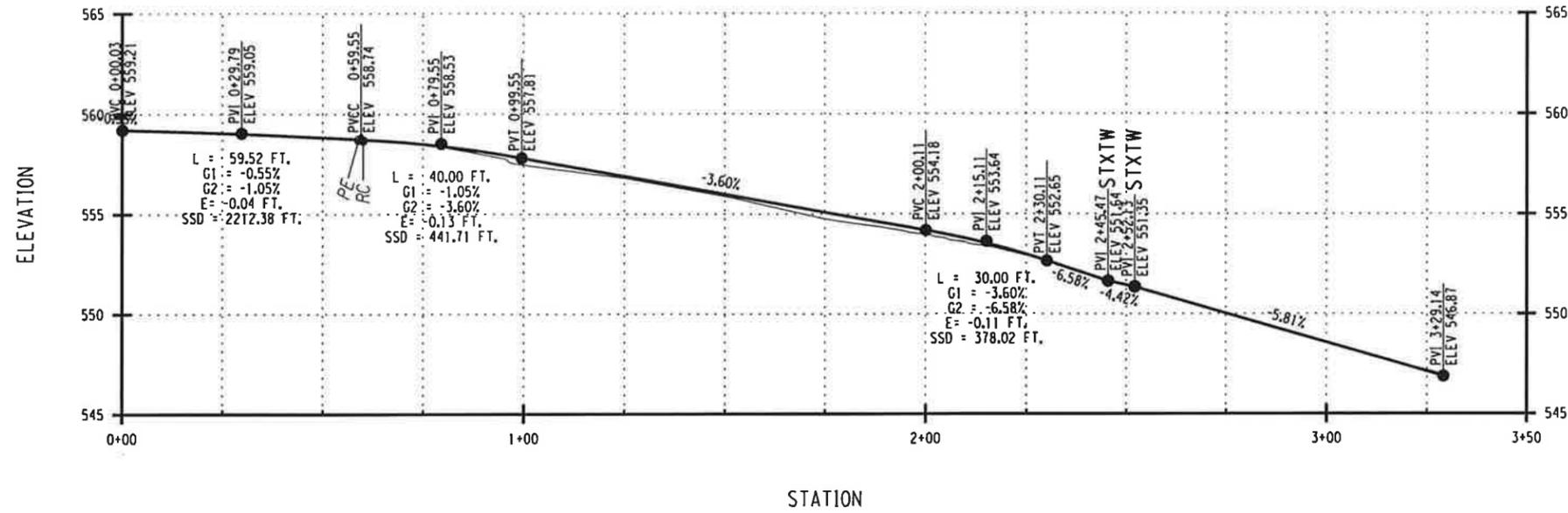
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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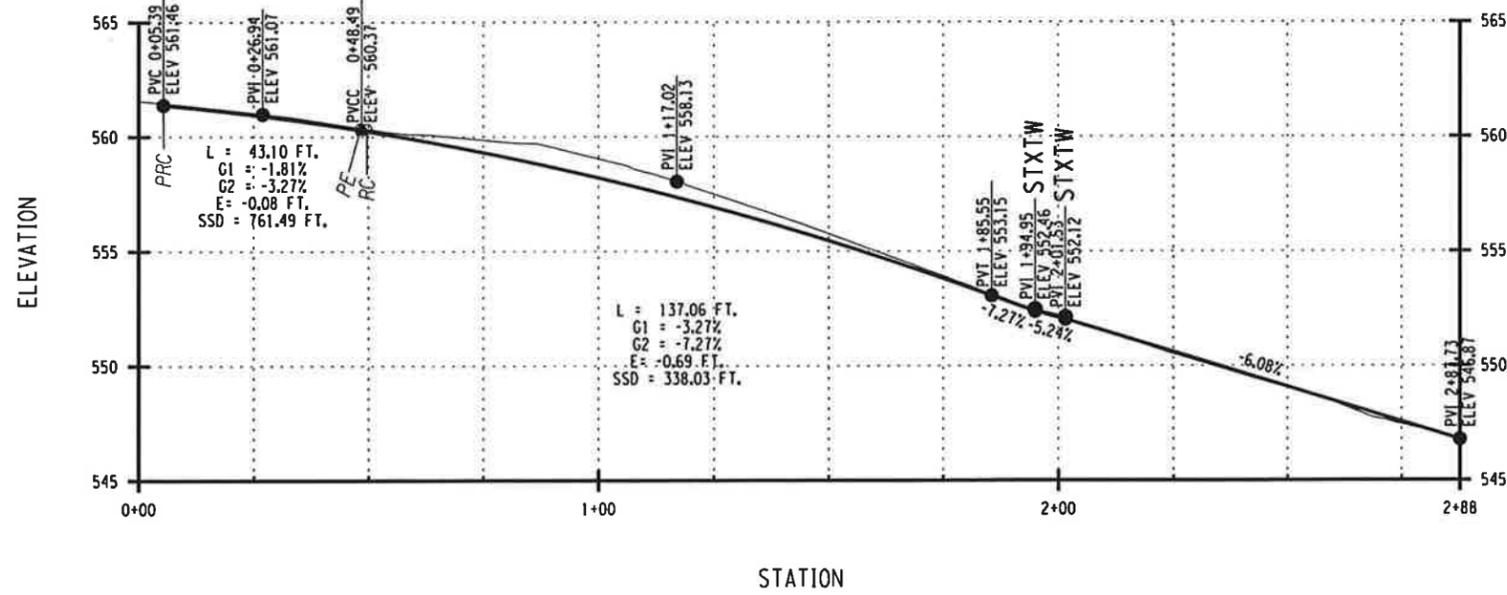
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PROJECT MANAGER: T. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER:  
 DESIGN SUPERVISOR:

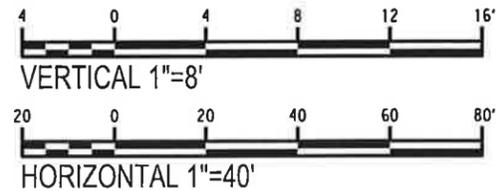
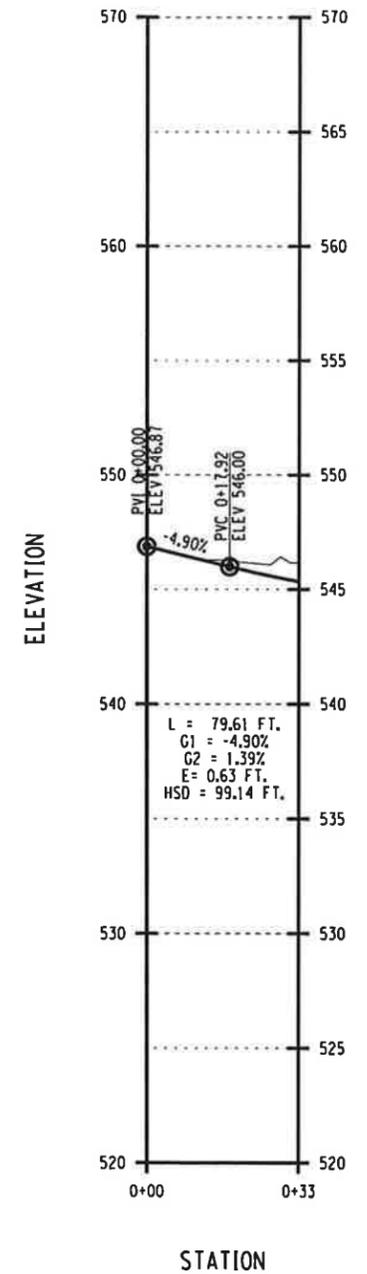
WEST GOAT ISLAND ROAD.AC.P



EAST GOAT ISLAND ROAD.AC.P



Alt Alignment.AC.P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - STEEL GIRDER	DRAWING NO. A-13
					SHEET NO. 5

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

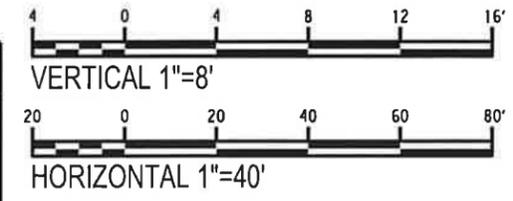
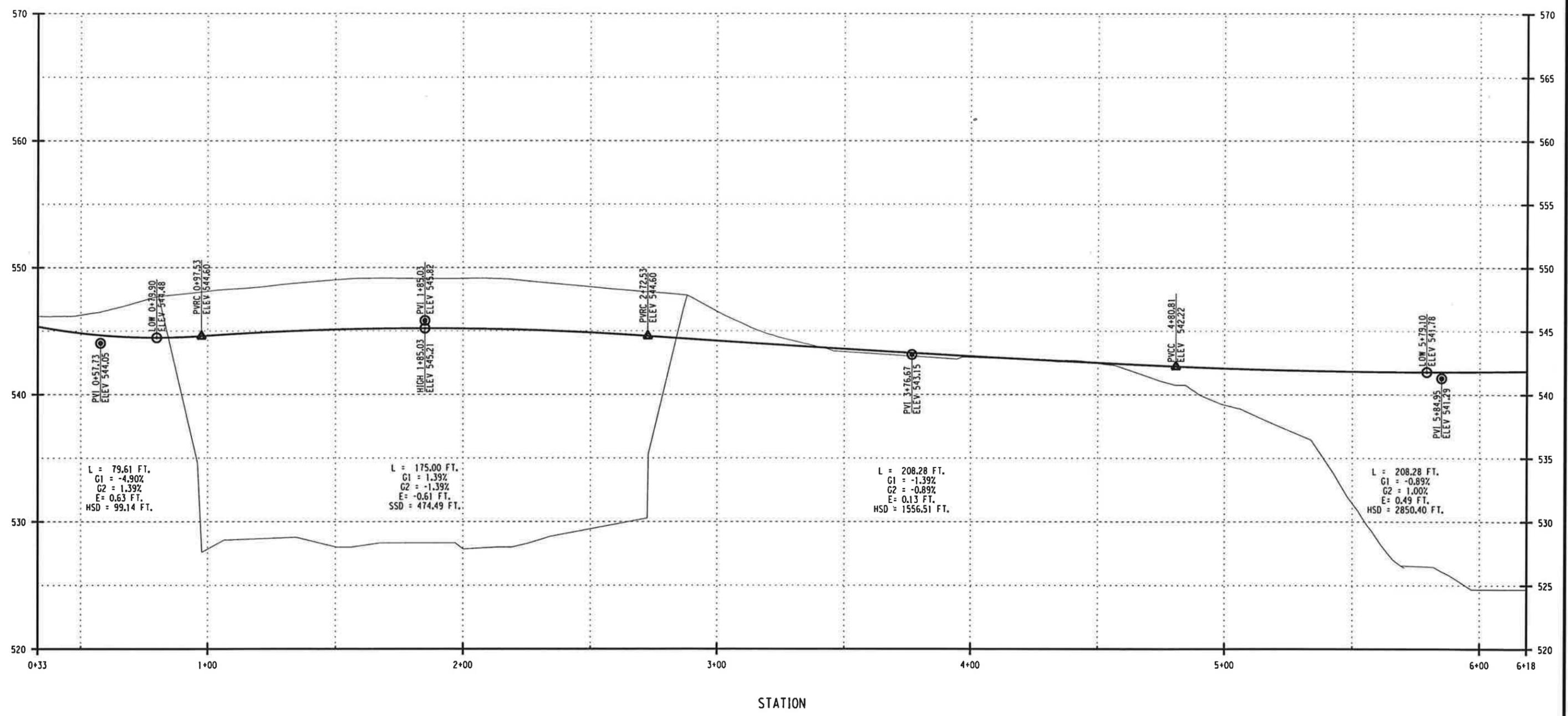
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

FILE NAME = 576040.rpt.dwg\_General Plans and Profiles.dwg  
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DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER T. WOODBURY

Alt Alignment\_AC\_P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS: _____ _____ _____	

AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
COUNTY: NIAGARA				PROFILE - STEEL GIRDER	DRAWING NO. A-13
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5	SHEET NO. 6
				DOCUMENT NAME: DESIGN REPORT	

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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DESIGN SUPERVISOR

DESIGN B. CARLSON

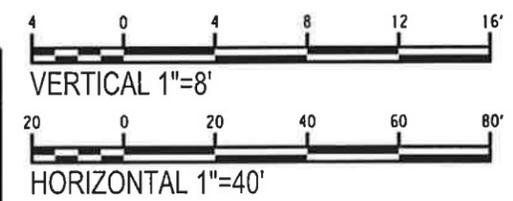
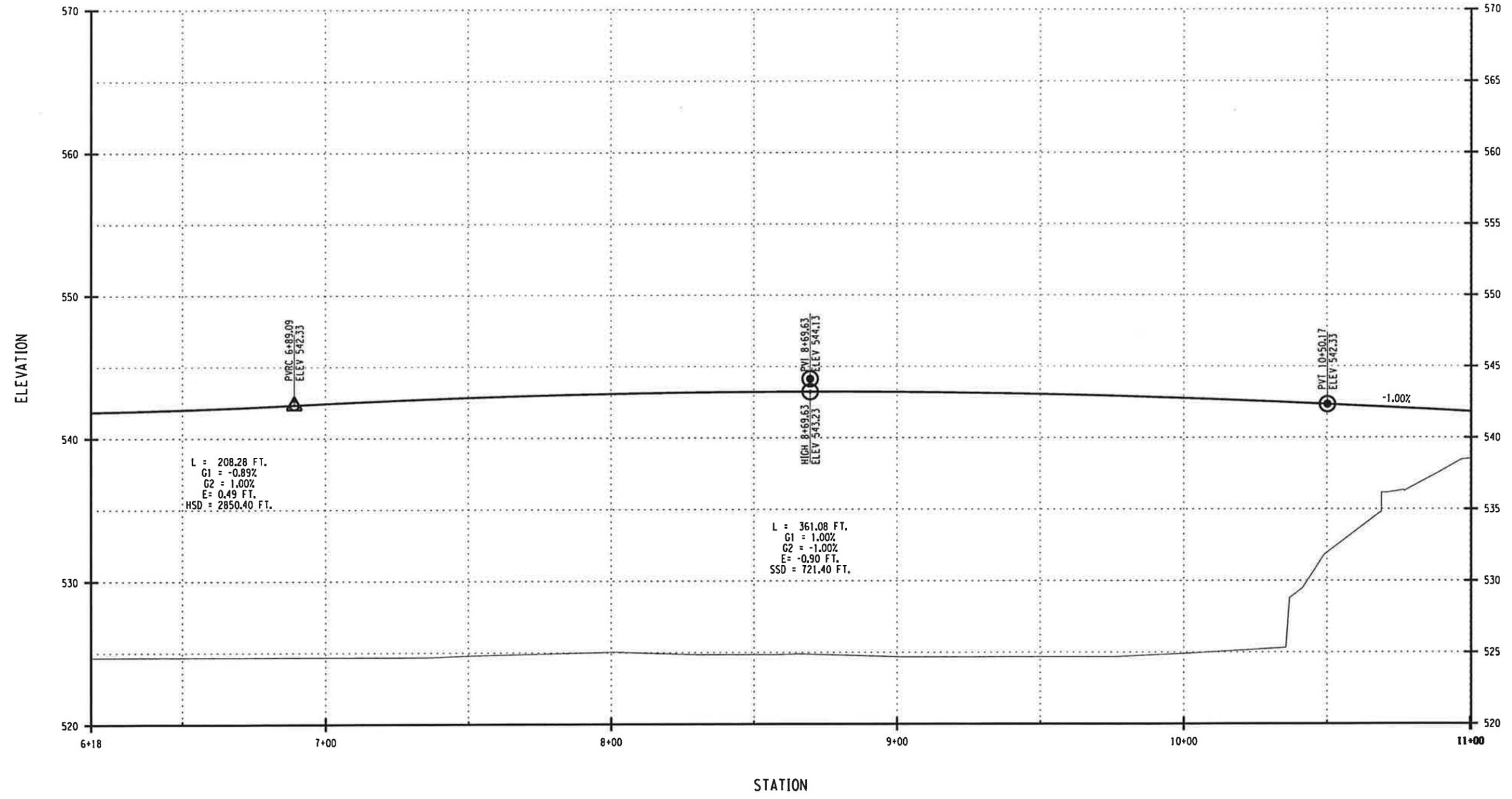
CHECK

DRAFTING A. BALANEYSKIY

CHECK

PROJECT MANAGER I. WOODBURY

Alt Alignment.AC..P



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					PROFILE - STEEL GIRDER	
	COUNTY: NIAGARA					DRAWING NO. A-13
						SHEET NO. 7

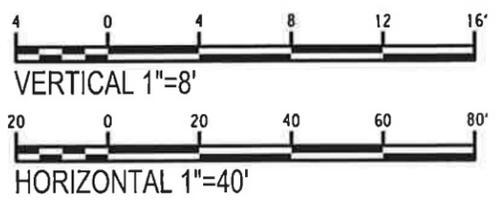
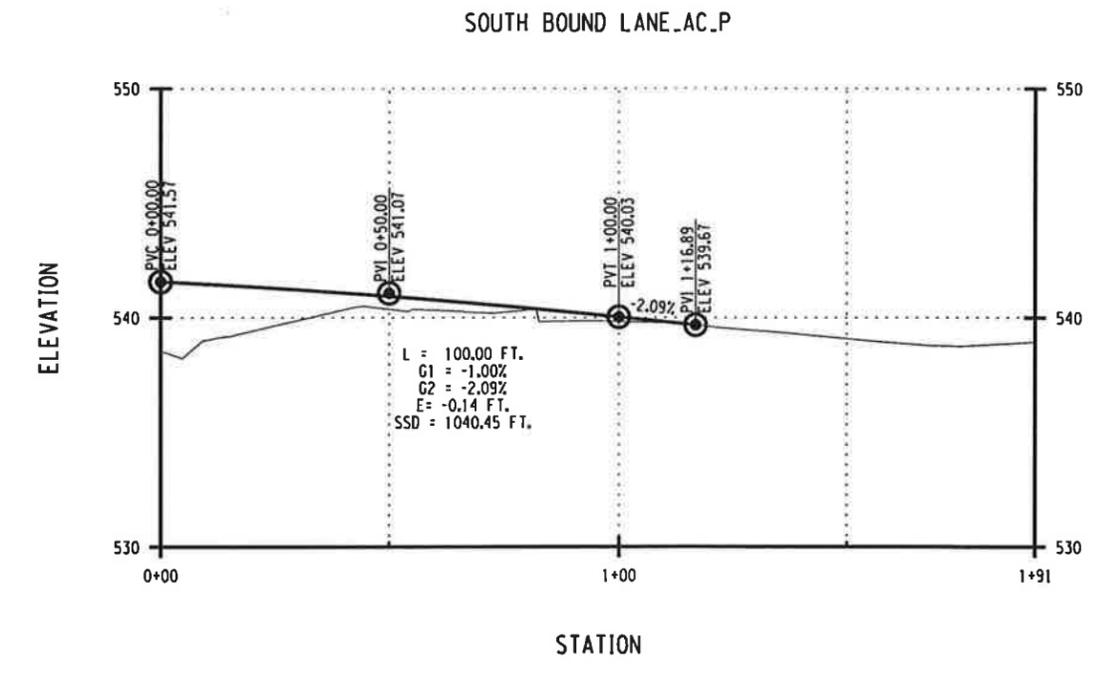
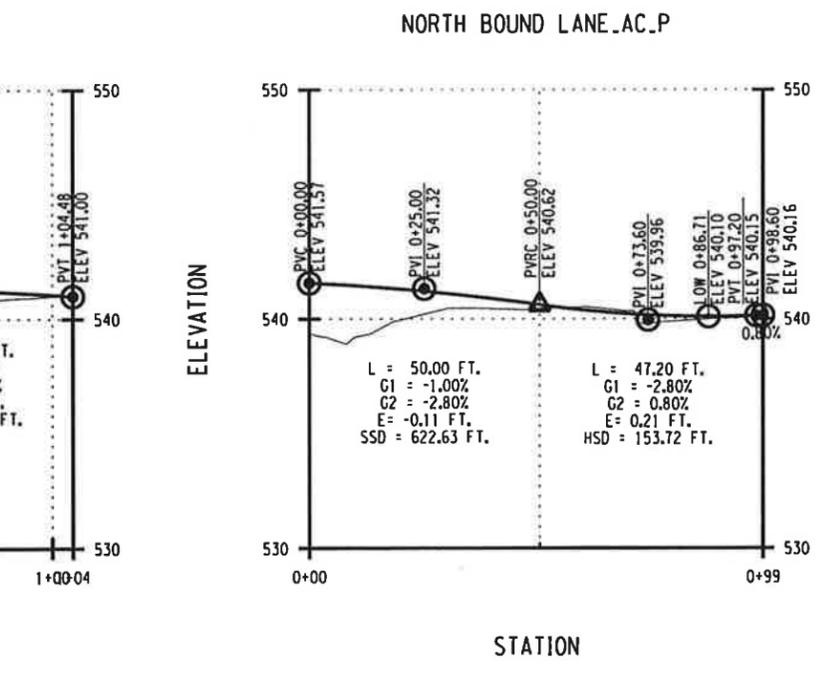
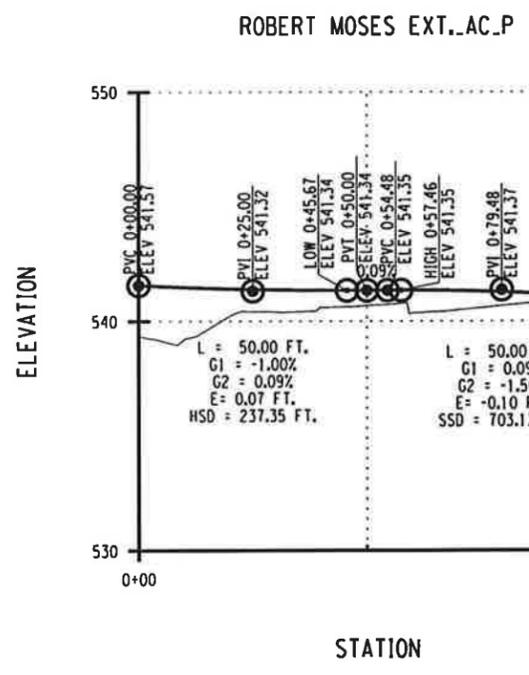
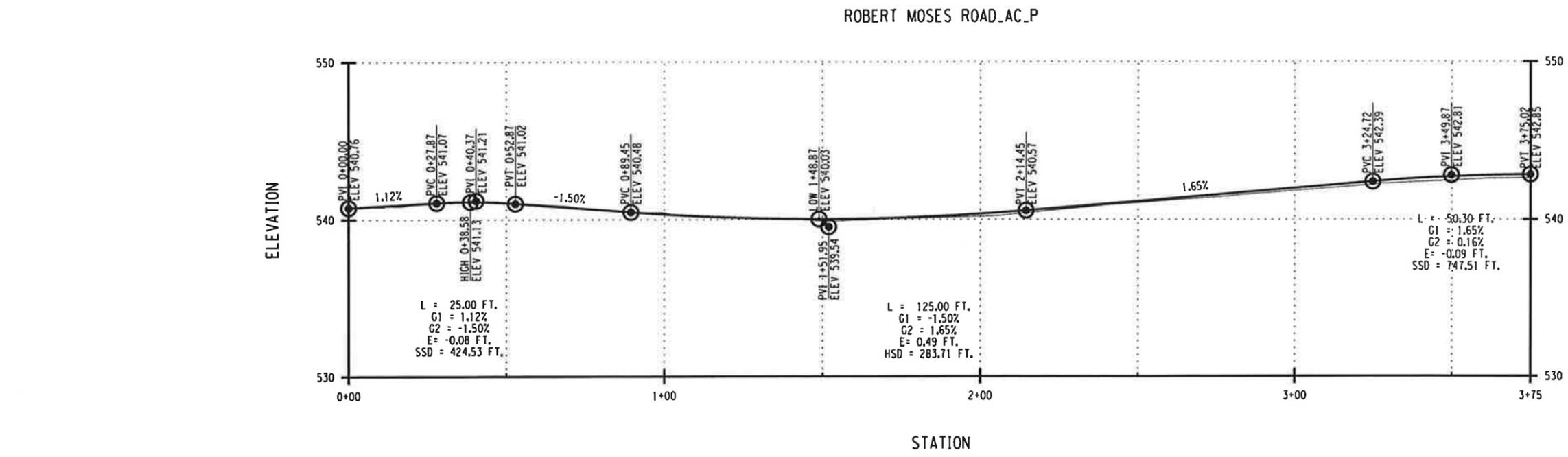
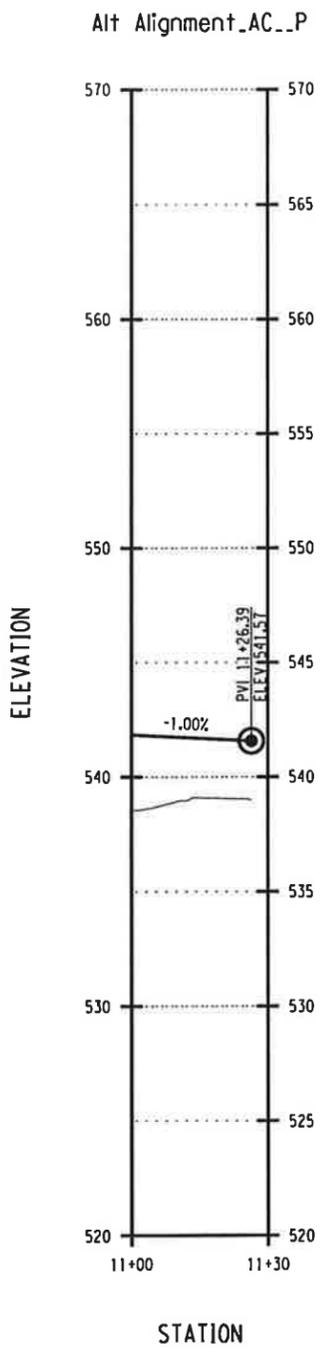
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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PROJECT MANAGER: T. WOODBURY  
 CHECK: A. BALANEVSKIY  
 DESIGN: B. CARLSON  
 JOB MANAGER:  
 DESIGN SUPERVISOR:



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	COUNTY: NIAGARA				PROFILE - STEEL GIRDER	DRAWING NO. A-13
						SHEET NO. 8



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER I. WOODBURY

CHECK

DRAFTING A. BALANEVSKIY

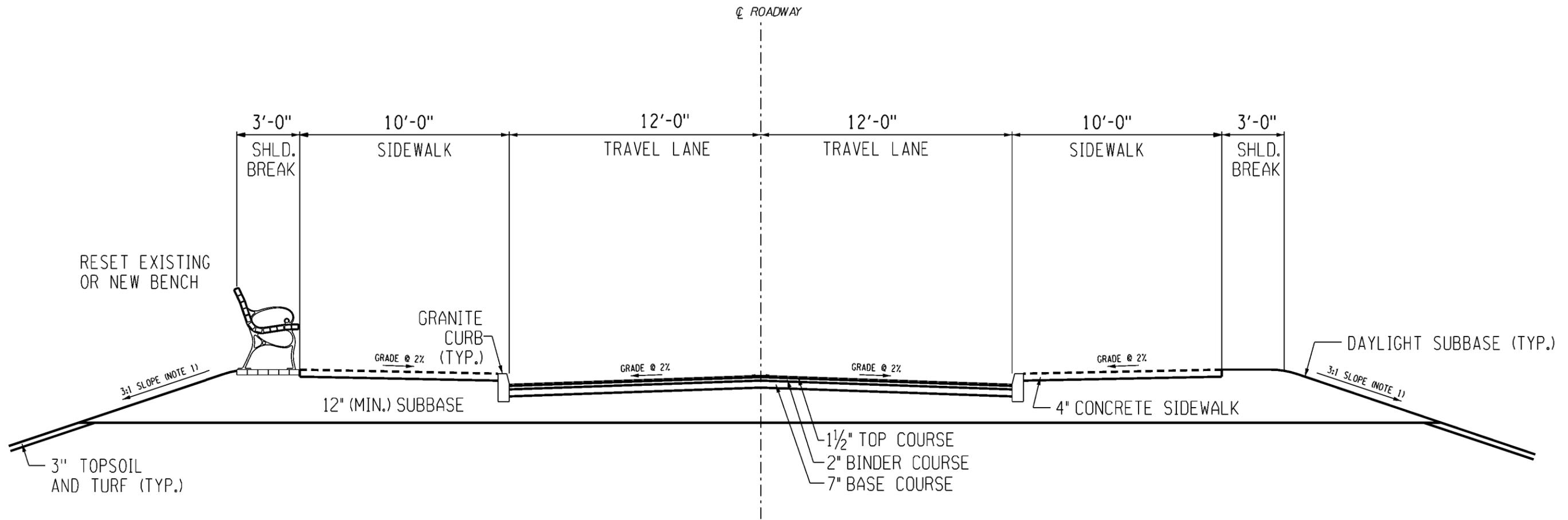
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DESIGN B. CARLSON

JOB MANAGER

DESIGN SUPERVISOR

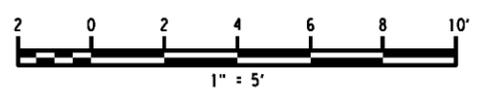
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**TYPICAL ROADWAY SECTION  
(GREEN ISLAND)**

**NOTES:**

1. SIDE SLOPES ON THE GREEN ISLAND APPROACH TO THE MAINLAND BRIDGE MAY BE STEEPER ON THE EXISTING ALIGNMENT OPTIONS TO KEEP THE TOE OF SLOPE ON THE ISLAND PENINSULA



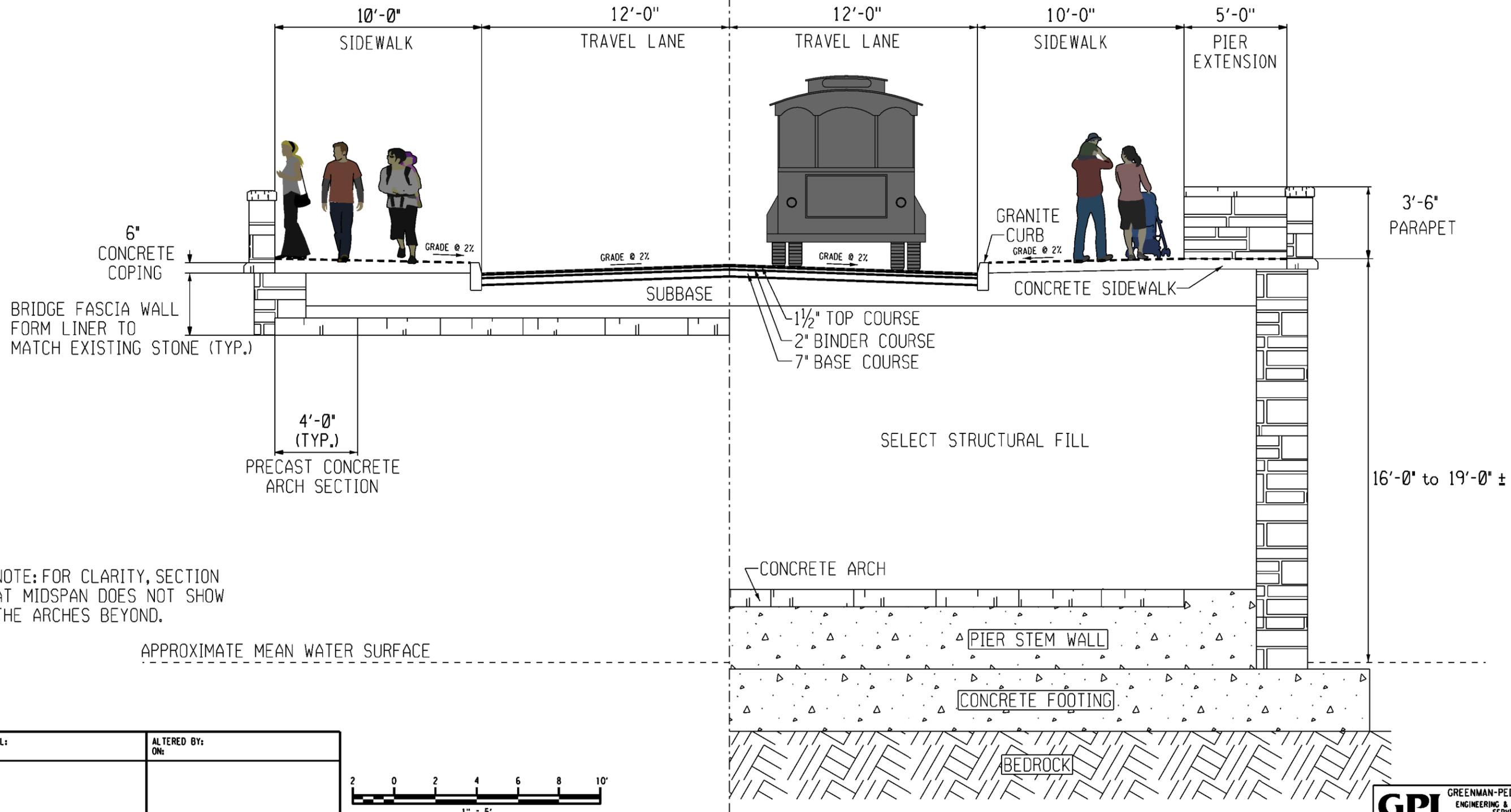
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					TYPICAL SECTION ROADWAY	DRAWING NO. A-14
	COUNTY: NIAGARA					SHEET NO. 1
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERING & CONSTRUCTION SERVICES  
BUFFALO, NEW YORK 14225

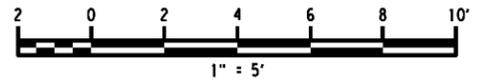
TYPICAL SECTION  
CENTER OF ARCH

TYPICAL SECTION  
CENTER LINE OF PIER



NOTE: FOR CLARITY, SECTION AT MIDSPAN DOES NOT SHOW THE ARCHES BEYOND.

APPROXIMATE MEAN WATER SURFACE



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					TYPICAL SECTION	
	COUNTY: NIAGARA				PRECAST CONCRETE ARCH BRIDGE	DRAWING NO. A-14
						SHEET NO. 2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERING & CONSTRUCTION SERVICES  
BUFFALO, NEW YORK 14225

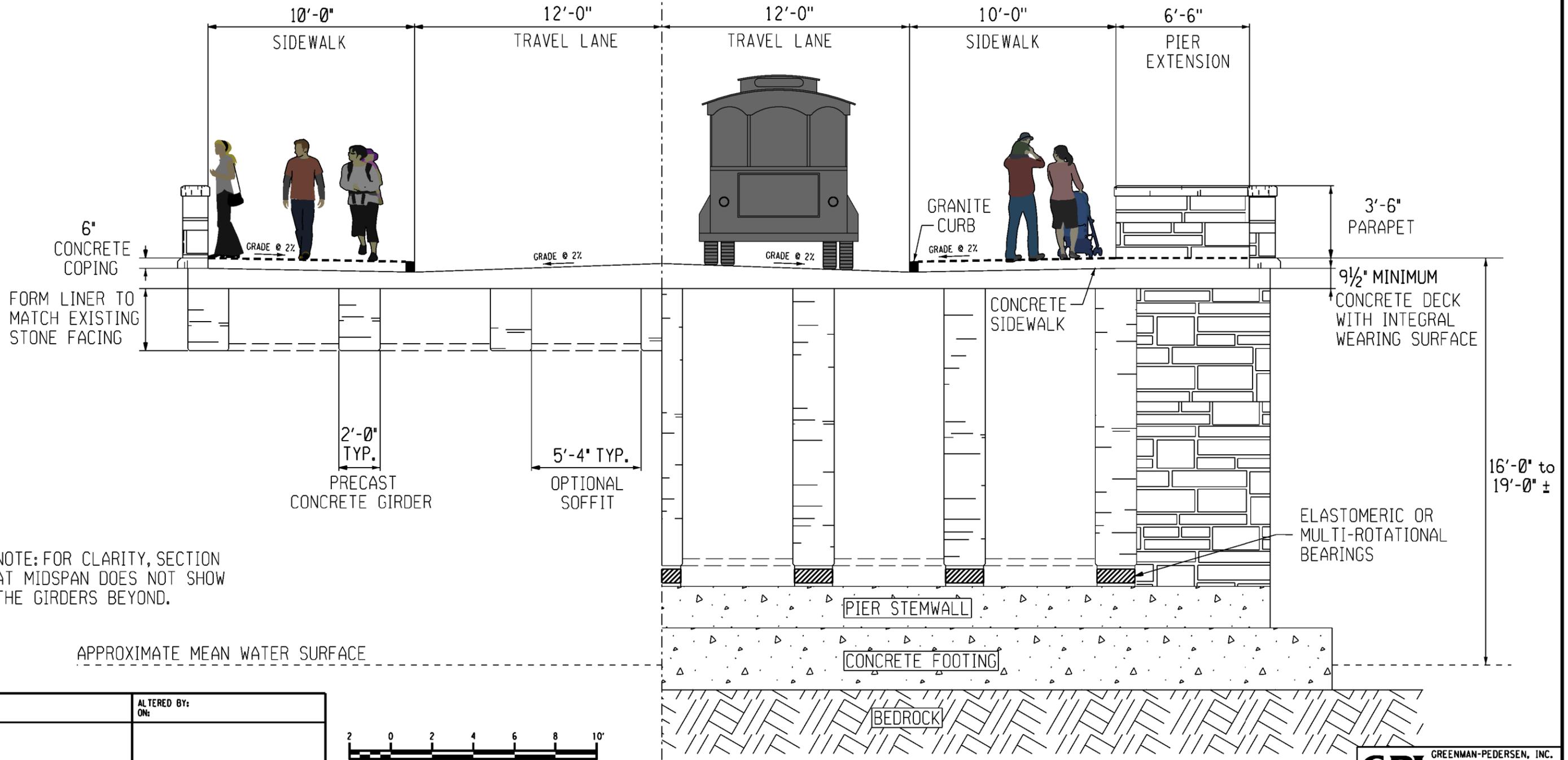
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PROJECT MANAGER: I. WOODBURY  
CHECK: A. BALANEVSKIY  
CHECK: B. CARLSON  
JOB MANAGER: J. SUPERVISOR

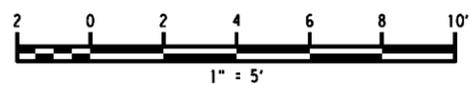
TYPICAL SECTION  
CENTER OF ARCH

TYPICAL SECTION  
CENTER LINE OF PIER



NOTE: FOR CLARITY, SECTION AT MIDSPAN DOES NOT SHOW THE GIRDERS BEYOND.

APPROXIMATE MEAN WATER SURFACE



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					TYPICAL SECTION	
	COUNTY: NIAGARA				PRECAST HAUNCHED GIRDER BRIDGE	DRAWING NO. A-14
						SHEET NO. 3

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERING & CONSTRUCTION SERVICES  
BUFFALO, NEW YORK 14225

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER I. WOODBURY

CHECK

DRAFTING A. BALANEVSKIY

CHECK

DESIGN B. CARLSON

JOB MANAGER

DESIGN SUPERVISOR

FILE NAME = 576040.rpt.dwg  
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PROJECT MANAGER I. WOODBURY

CHECK

DRAFTING A. BALANEVSKIY

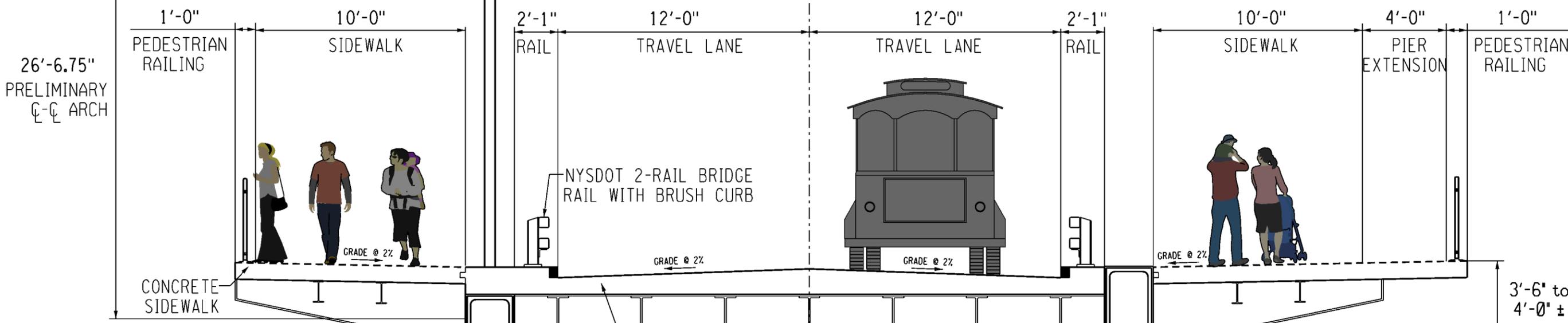
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DESIGN B. CARLSON

JOB MANAGER

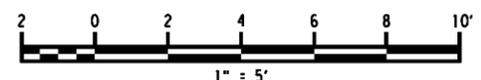
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FILE NAME = 576940.rpt.dwg  
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TYPICAL SECTION  
CENTER OF ARCH

TYPICAL SECTION  
CENTER LINE OF PIER



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					TYPICAL SECTION	
	COUNTY: NIAGARA				STEEL TIED ARCH BRIDGE	DRAWING NO. A-14
						SHEET NO. 4

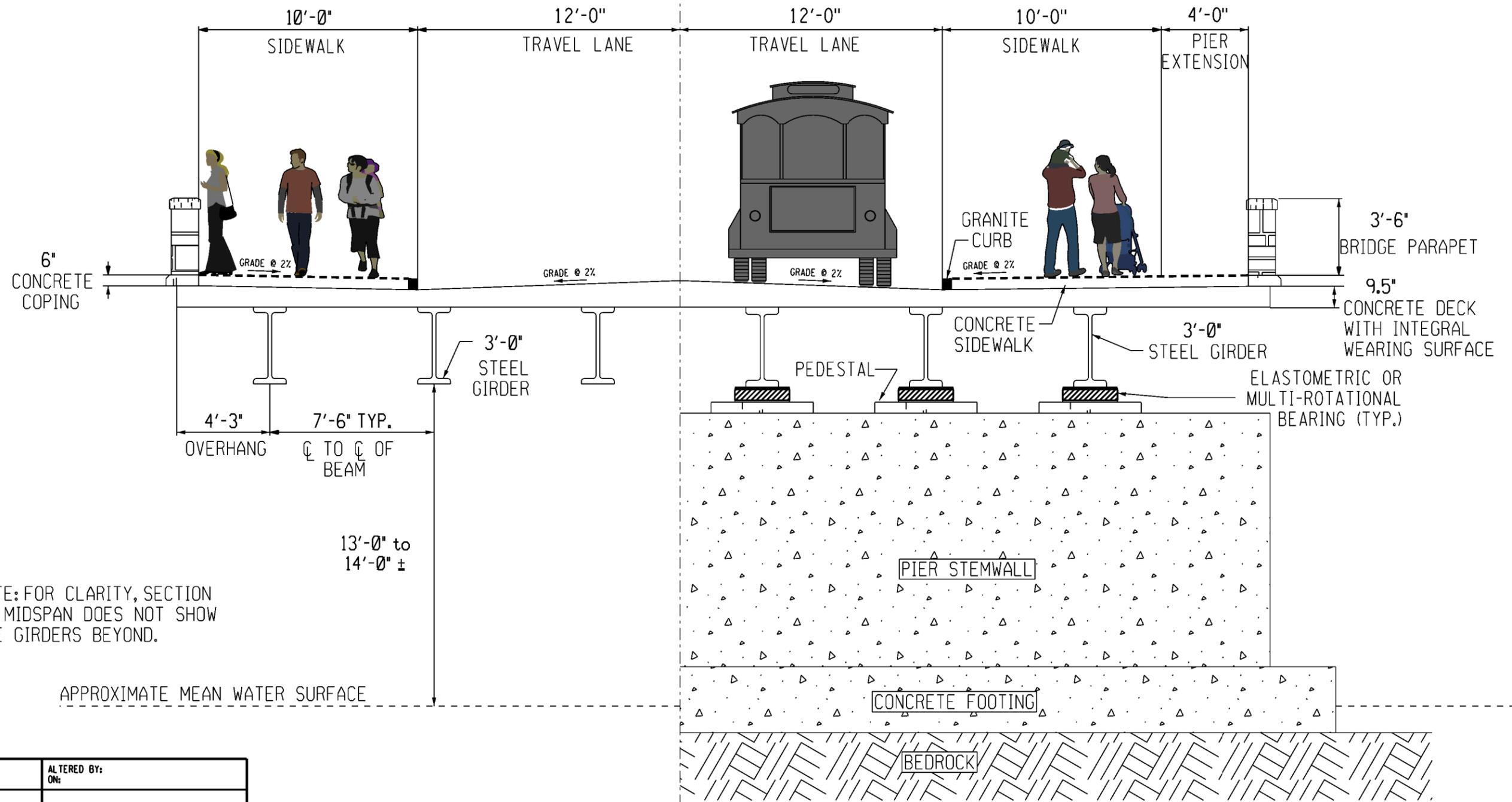
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERING & CONSTRUCTION SERVICES  
BUFFALO, NEW YORK 14225

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

TYPICAL SECTION  
MIDSPAN

TYPICAL SECTION  
CENTER LINE OF PIER



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USER = 363110 PM

PROJECT MANAGER I. WOODBURY  
CHECK  
DRAFTING A. BALANEVSKIY  
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DESIGN B. CARLSON  
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JOB MANAGER  
DESIGN SUPERVISOR

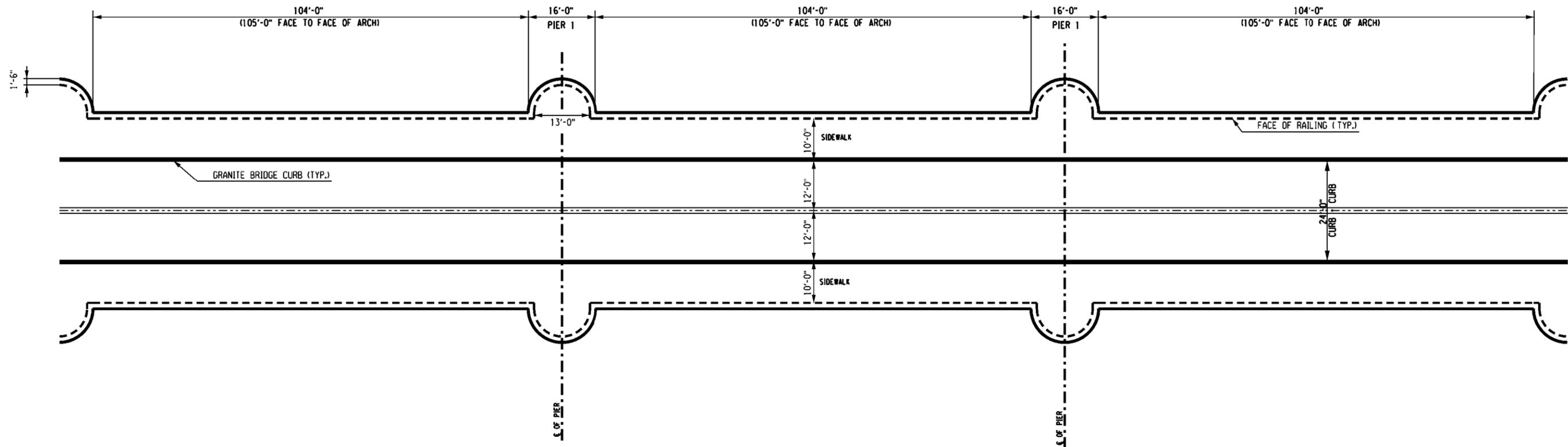
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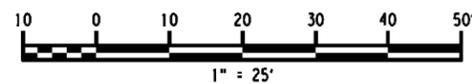
<p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p>		<p>GREENMAN-PEDERSEN, INC. ENGINEERING &amp; CONSTRUCTION SERVICES BUFFALO, NEW YORK 14225</p>	
<p>ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED</p>		<p>CONTRACT NUMBER</p>	
<p>TYPICAL SECTION STEEL GIRDER BRIDGE</p>		<p>DRAWING NO. A-14 SHEET NO. 5</p>	
<p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5</p>		<p>DOCUMENT NAME: DESIGN REPORT</p>	

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 USER = 3637403 PM

DESIGN SUPERVISOR: JOB MANAGER: DESIGNER: B. CARLSON CHECK: DRAFTING: A. BALANEVSKIY CHECK: PROJECT MANAGER: I. WOODBURY



BRIDGE PLAN  
 PRECAST CONCRETE ARCH  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (PRECAST CONCRETE ARCH)	DRAWING NO. A-15 SHEET NO. 1

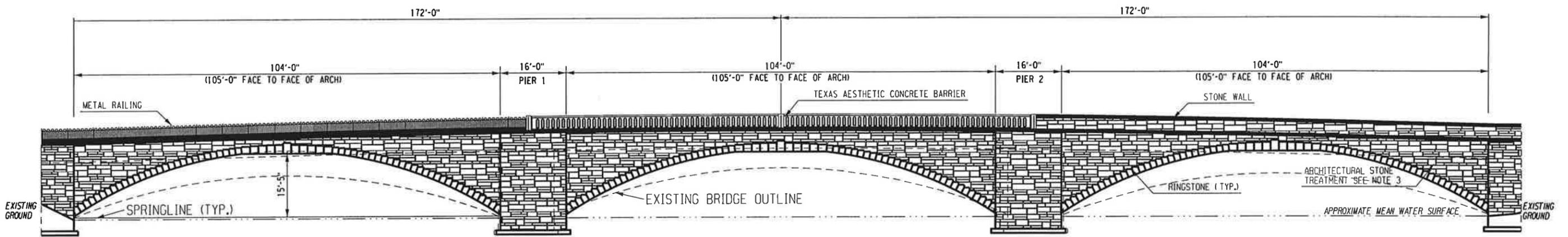
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION  
 SERVICES  
 BUFFALO, NEW YORK 14225

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

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PROJECT MANAGER T. WOODBURY  
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 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

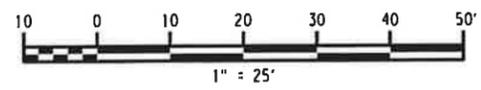


**BRIDGE ELEVATION  
 PRECAST CONCRETE ARCH  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)**

**NOTES:**

1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
3. ARCHITECTURAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER

AFFIX SEAL: ON:	ALTERED BY: ON:

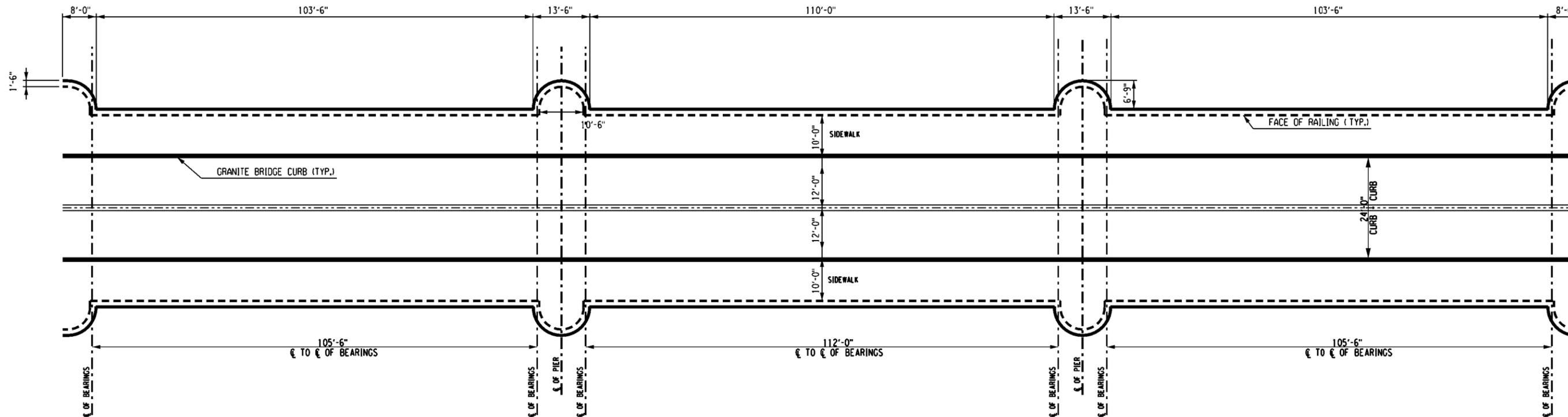


AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (PRECAST CONCRETE ARCH)	DRAWING NO. A-15 SHEET NO. 2
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

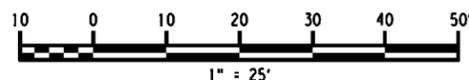
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

FILE NAME : 576040.rpt.dwg - Bridge Plans and Elevations.dwg  
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DESIGN SUPERVISOR: DESIGN B. CARLSON CHECK: DRAFTING A. BALANEVSKIY CHECK: PROJECT MANAGER I. WOODBURY



BRIDGE PLAN  
 PRECAST CONCRETE HAUNCHED GIRDER  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (PRECAST CONCRETE HAUNCHED GIRDER)	DRAWING NO. A-16 SHEET NO. 1

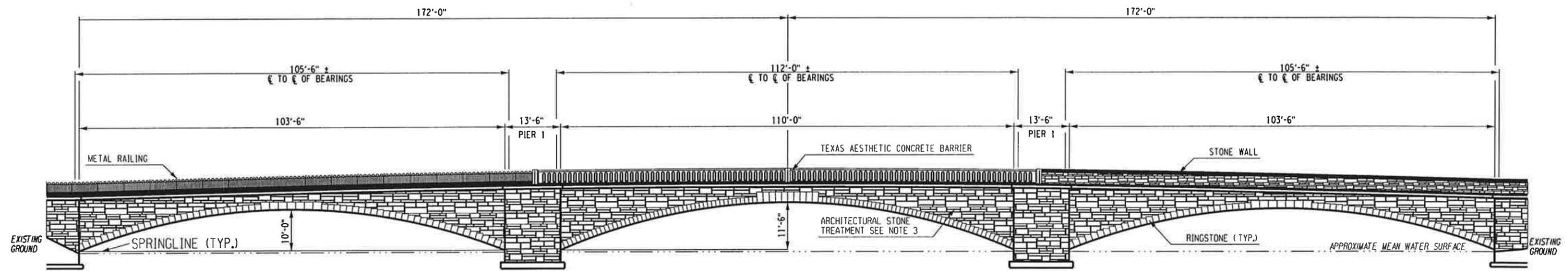
**GPI** GREENMAN-PEDERSEN, INC.  
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

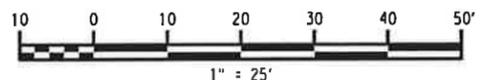


**BRIDGE ELEVATION**  
**PRECAST CONCRETE HAUNCHED GIRDER**  
**(MAINLAND NIAGARA FALLS TO GREEN ISLAND)**

**NOTES:**

1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
3. ARCHITECTUAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER

AFFIX SEAL: ON:	ALTERED BY: ON:



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (PRECAST CONCRETE HAUNCHED GIRDER)	DRAWING NO. A-16 SHEET NO. 2

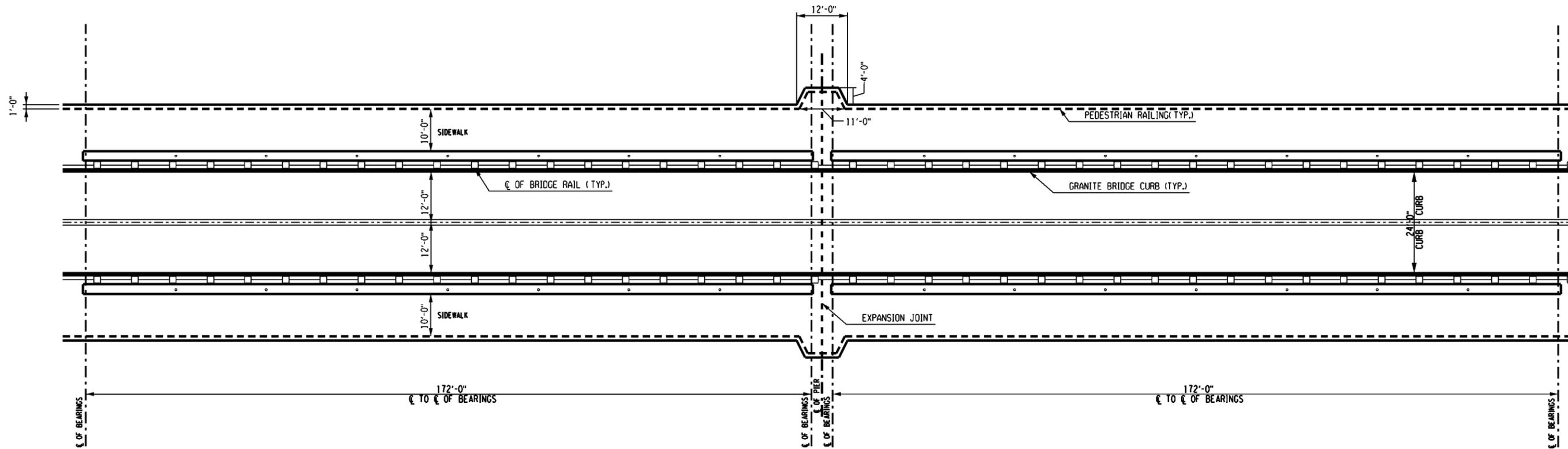
**GPI** GREENMAN-PEDERSEN, INC.  
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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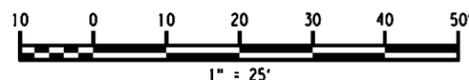
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DESIGN SUPERVISOR: DESIGN B. CARLSON CHECK: DRAFTING A. BALANEYSKIY CHECK: PROJECT MANAGER I. WOODBURY



BRIDGE PLAN  
 STEEL TIED ARCH  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)

AFFIX SEAL: ON:	ALTERED BY: ON:



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (STEEL TIED ARCH)	DRAWING NO. A-17 SHEET NO. 1

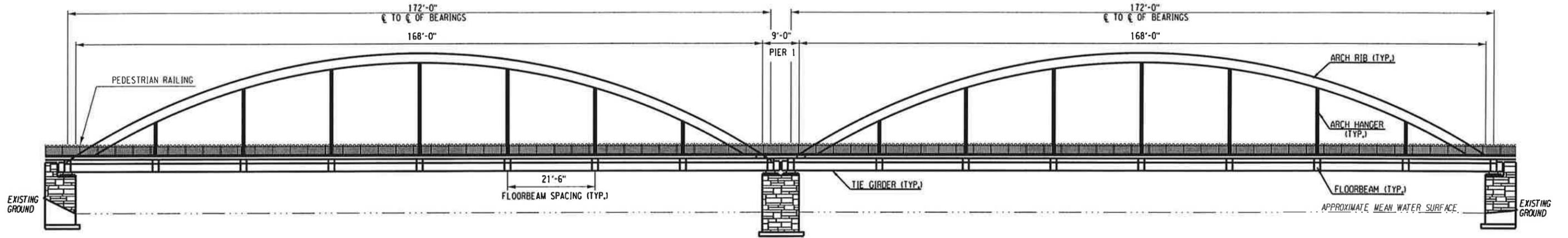
**GPI** GREENMAN-PEDERSEN, INC.  
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 SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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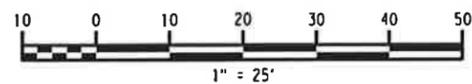
PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR



**BRIDGE ELEVATION**  
**STEEL TIED ARCH BRIDGE**  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)

**NOTES:**

1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
3. ARCHITECTURAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER



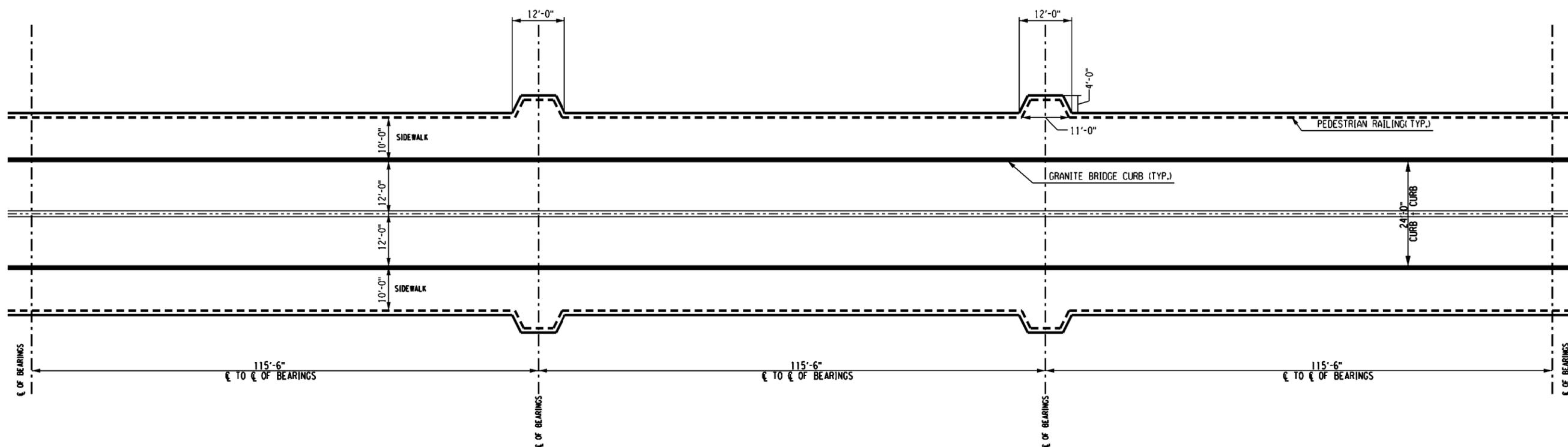
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					BRIDGE ELEVATION	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (STEEL TIED ARCH)	DRAWING NO. A-17 SHEET NO. 2
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

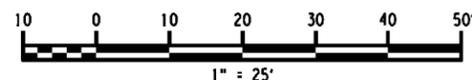
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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DESIGN SUPERVISOR: PROJECT MANAGER: I. WOODBURY  
 DESIGNER: B. CARLSON  
 DRAFTER: A. BALANEVSKIY  
 CHECKER:



BRIDGE PLAN  
 STEEL GIRDER BRIDGE  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)



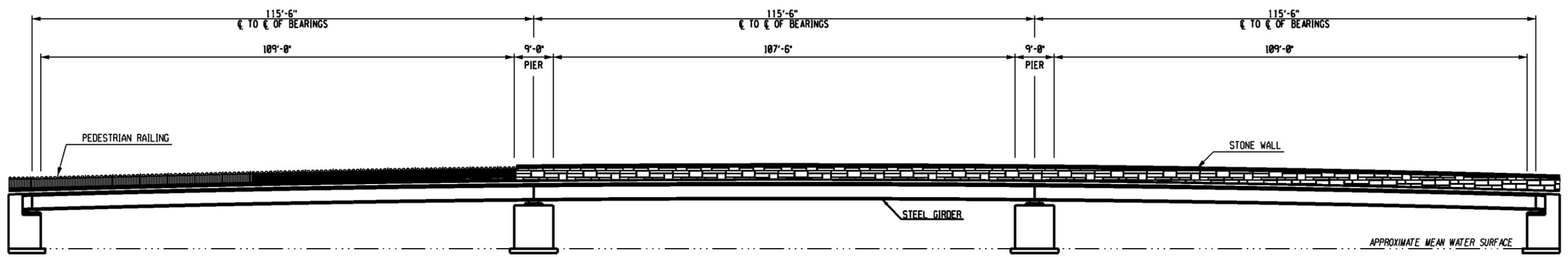
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				MAINLAND TO GREEN ISLAND (STEEL GIRDER)	DRAWING NO. A-18 SHEET NO. 1
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

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 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER T. WOODBURY

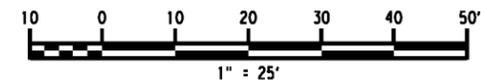


**BRIDGE ELEVATION**  
**STEEL GIRDER BRIDGE**  
 (MAINLAND NIAGARA FALLS TO GREEN ISLAND)

**NOTES:**

1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
3. ARCHITECTURAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER

AFFIX SEAL: ON:	ALTERED BY: ON:

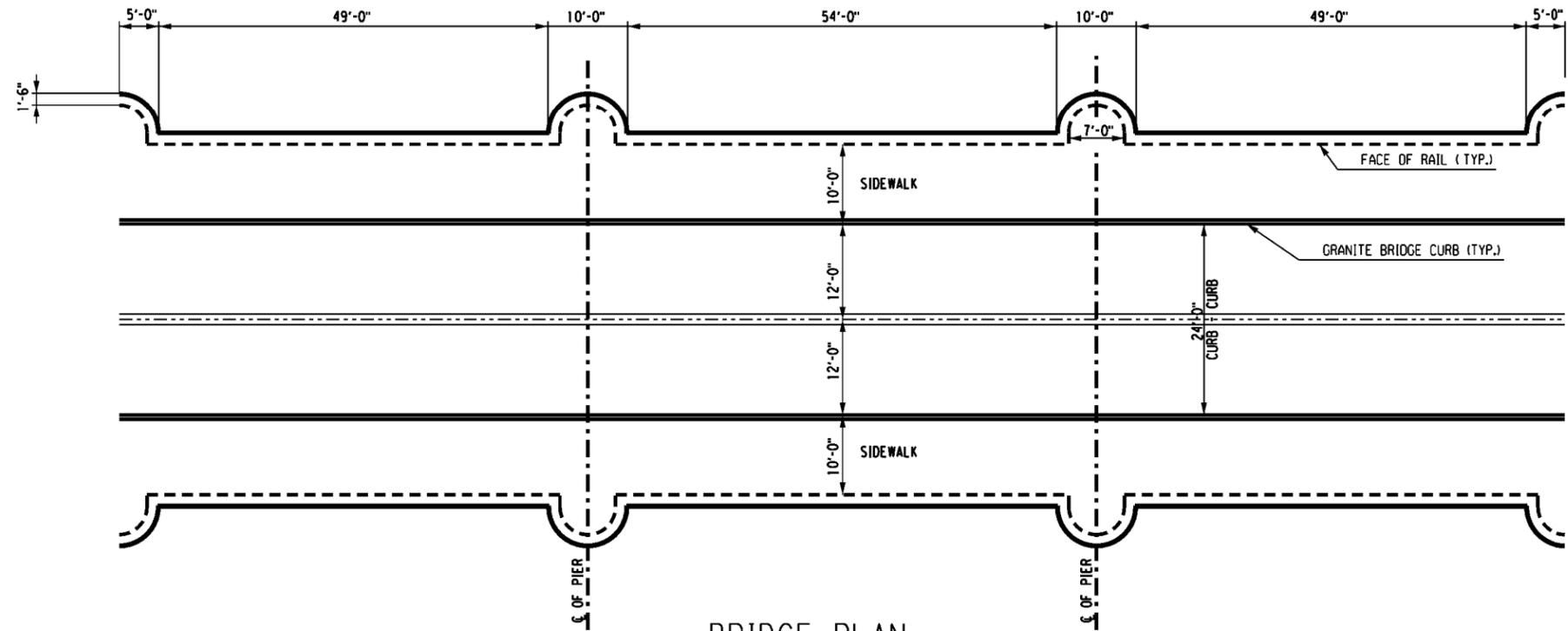


AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PI# 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION MAINLAND TO GREEN ISLAND (STEEL GIRDER)	DRAWING NO. A-18 SHEET NO. 2
	COUNTY: NIAGARA					
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

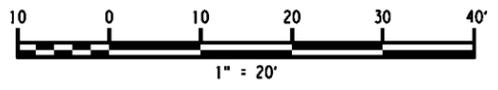
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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 USER =

DESIGN SUPERVISOR: DESIGN B. CARLSON CHECK: DRAFTING A. BALANEYSKIY CHECK: PROJECT MANAGER I. WOODBURY



BRIDGE PLAN  
 PRECAST CONCRETE ARCH (THREE SPAN)  
 (GREEN ISLAND TO GOAT ISLAND)



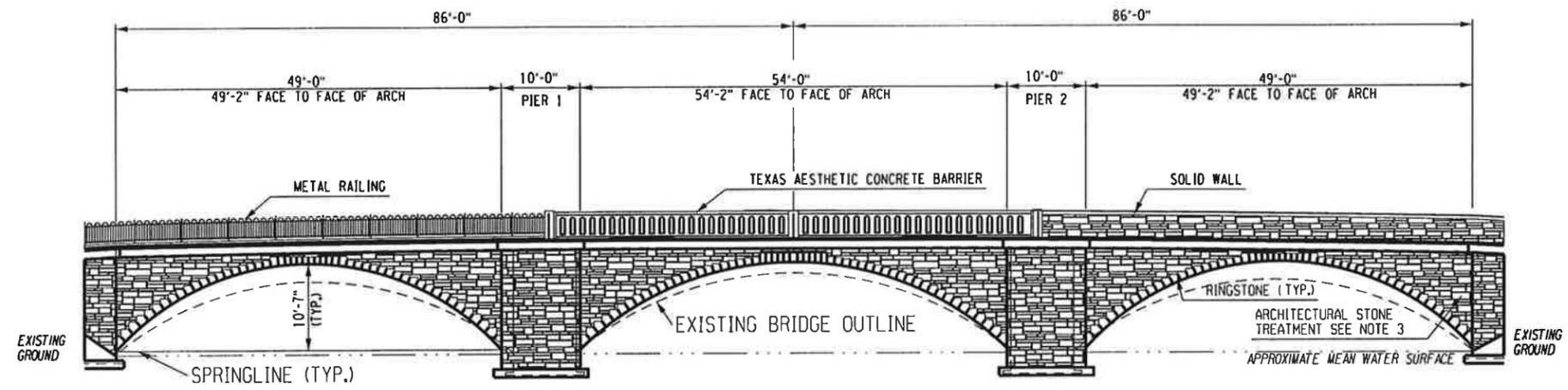
AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (PRECAST CONCRETE ARCH)	DRAWING NO. A-19 SHEET NO. 1
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

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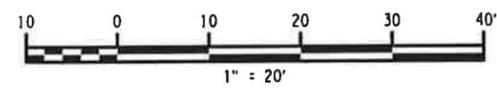
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PROJECT MANAGER: T. WOODBURY  
 CHECK: A. BALANEVSKIY  
 CHECK: B. CARLSON  
 DESIGN: B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR



BRIDGE ELEVATION  
 PRECAST CONCRETE ARCH (THREE SPAN)  
 (GREEN ISLAND TO GOAT ISLAND)

- NOTES:
1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
  2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
  3. ARCHITECTUAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (PRECAST CONCRETE ARCH)	DRAWING NO. A-19 SHEET NO. 2

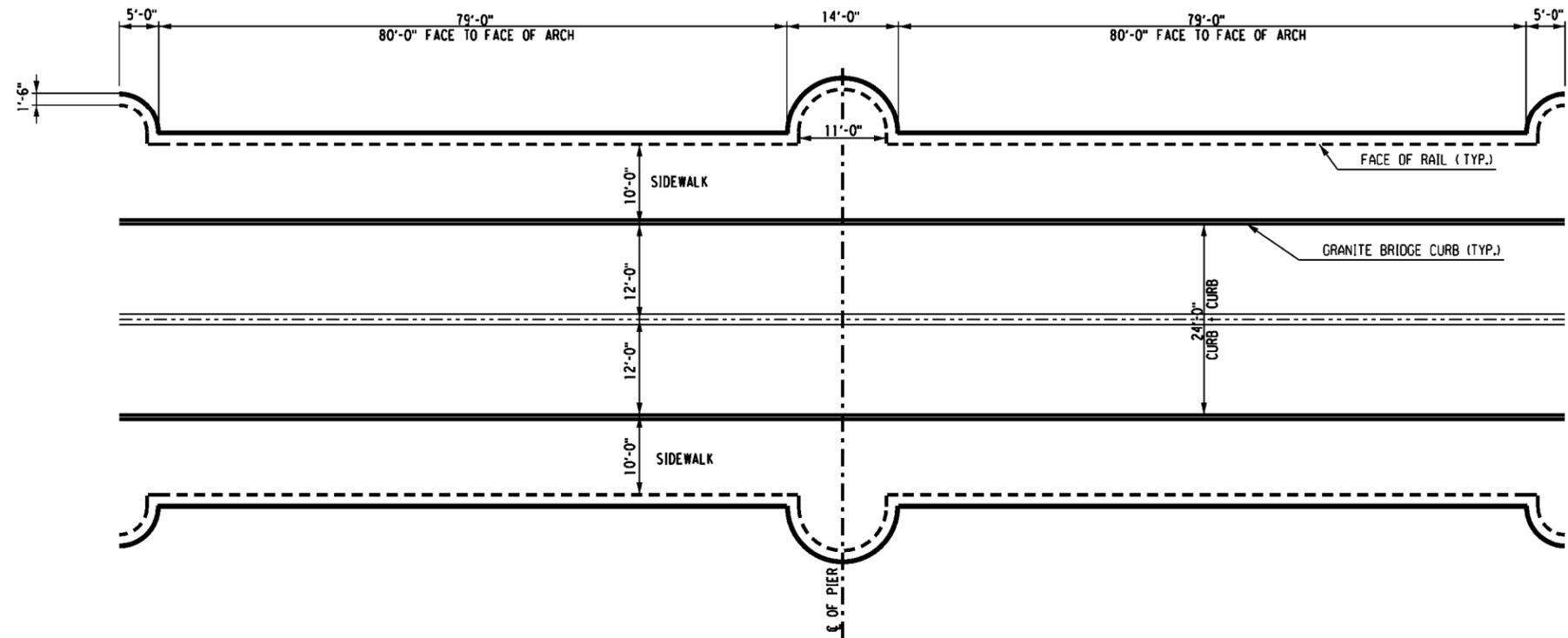
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

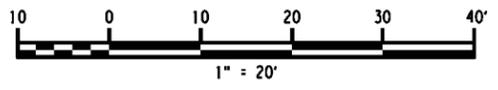
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DESIGN SUPERVISOR: DESIGN B. CARLSON CHECK: DRAFTING A. BALANEYSKIY CHECK: PROJECT MANAGER I. WOODBURY



BRIDGE PLAN  
 PRECAST CONCRETE ARCH (TWO SPAN)  
 (GREEN ISLAND TO GOAT ISLAND)

AFFIX SEAL: ON:	ALTERED BY: ON:

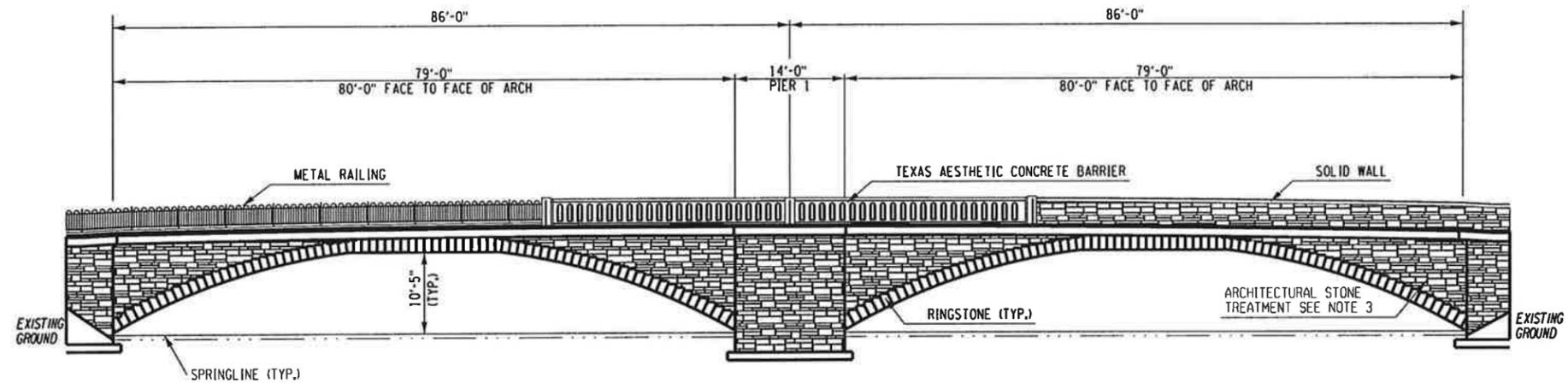


AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (PRECAST CONCRETE ARCH)	DRAWING NO. A-20 SHEET NO. 1
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	



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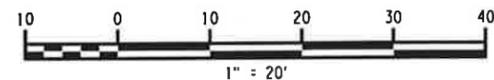
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 DESIGN B. CARLSON  
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 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER I. WOODBURY



BRIDGE ELEVATION  
 PRECAST CONCRETE ARCH (TWO SPAN)  
 (GREEN ISLAND TO GOAT ISLAND)

NOTES:

1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
3. ARCHITECTUAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (PRECAST CONCRETE ARCH)	DRAWING NO. A-20 SHEET NO. 2

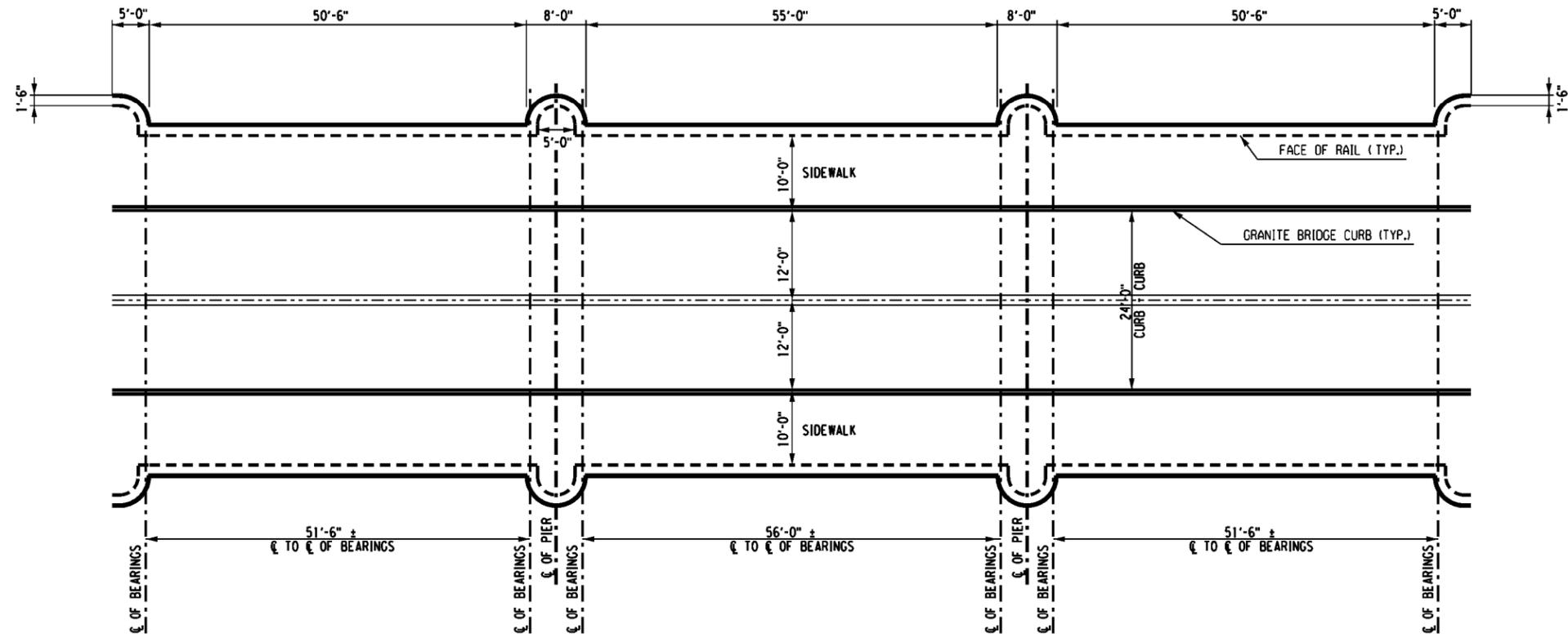
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 BUFFALO, NEW YORK 14225

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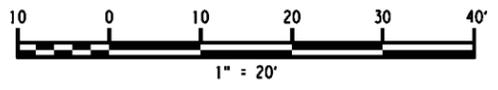
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DESIGN SUPERVISOR: DESIGN B. CARLSON CHECK: DRAFTING A. BALANEYSKIY CHECK: PROJECT MANAGER I. WOODBURY



BRIDGE PLAN  
 PRECAST CONCRETE HAUNCHED GIRDER  
 (GREEN ISLAND TO GOAT ISLAND)



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (PRECAST CONCRETE HAUNCHED GIRDER)	DRAWING NO. A-21 SHEET NO. 1

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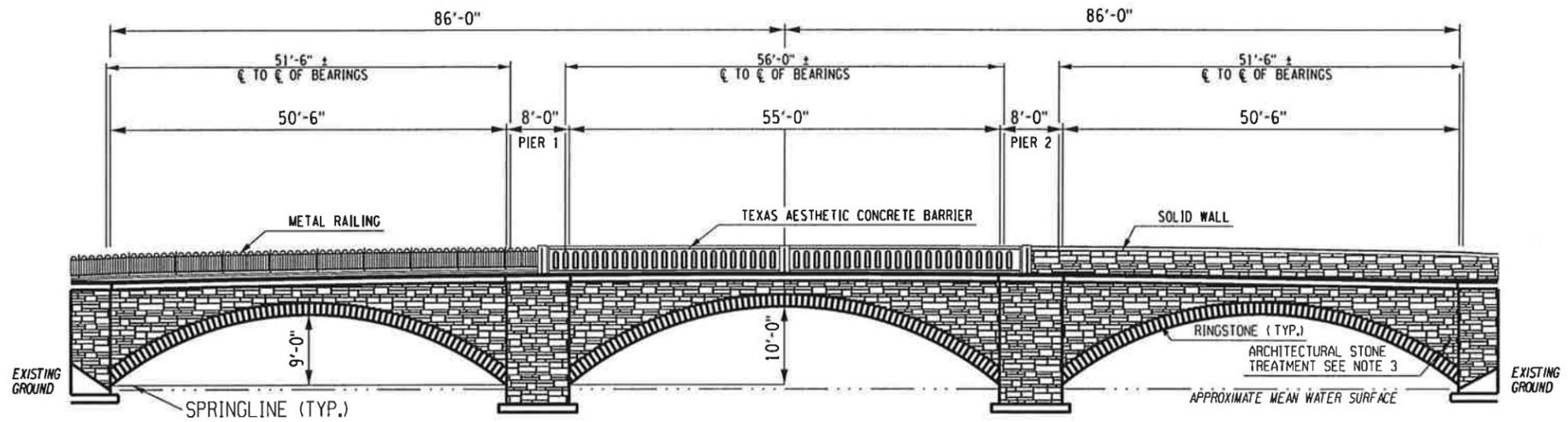
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

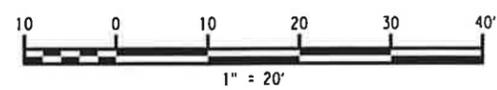
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PROJECT MANAGER I. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER



BRIDGE ELEVATION  
 PRECAST CONCRETE HAUNCHED GIRDER  
 (GREEN ISLAND TO GOAT ISLAND)

- NOTES:
1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
  2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
  3. ARCHITECTUAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (PRECAST CONCRETE HAUNCHED GIRDER)	DRAWING NO. A-21 SHEET NO. 2

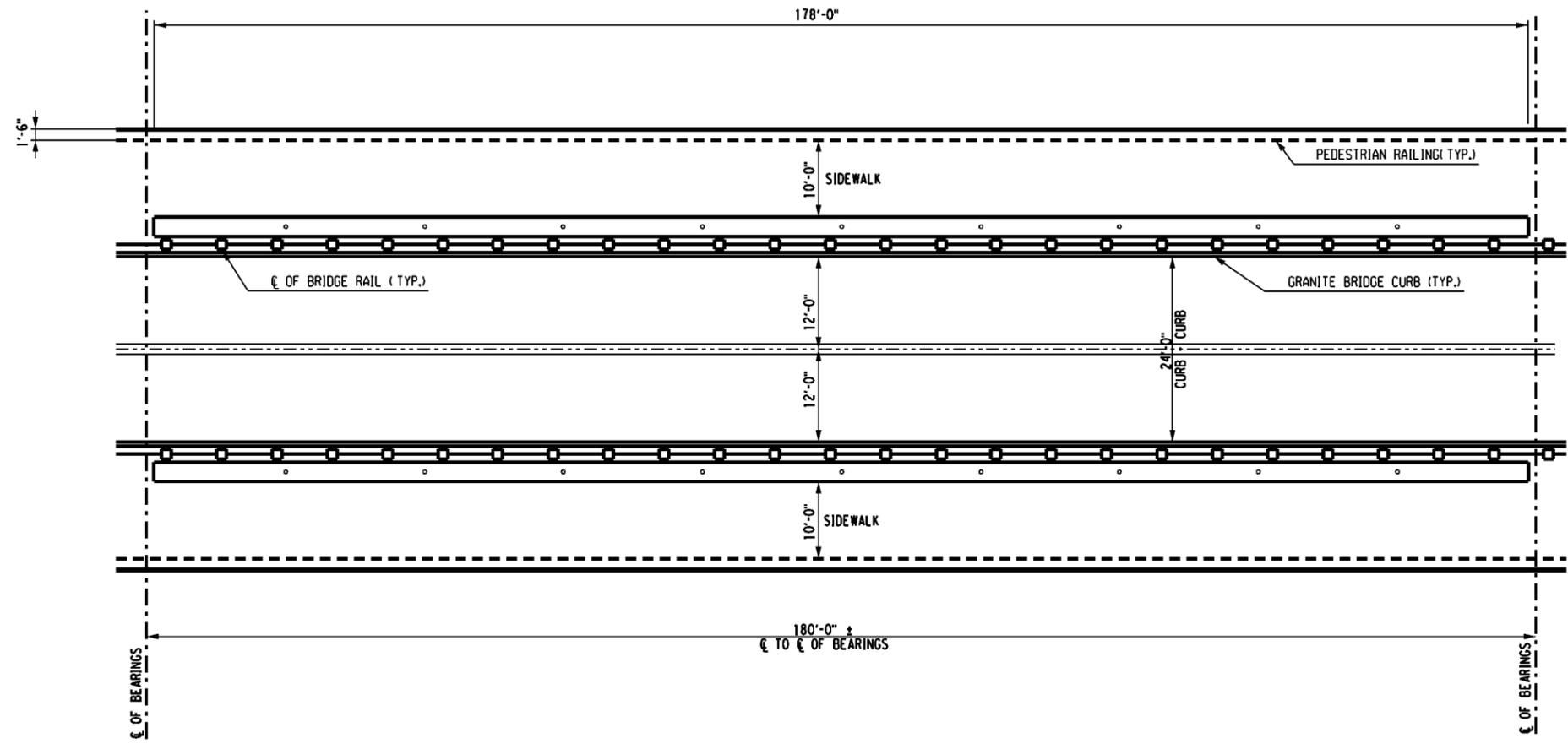
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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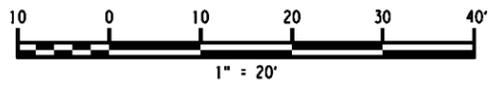
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BRIDGE PLAN  
 STEEL TIED ARCH  
 (GREEN ISLAND TO GOAT ISLAND)

AFFIX SEAL: ON:	ALTERED BY: ON:

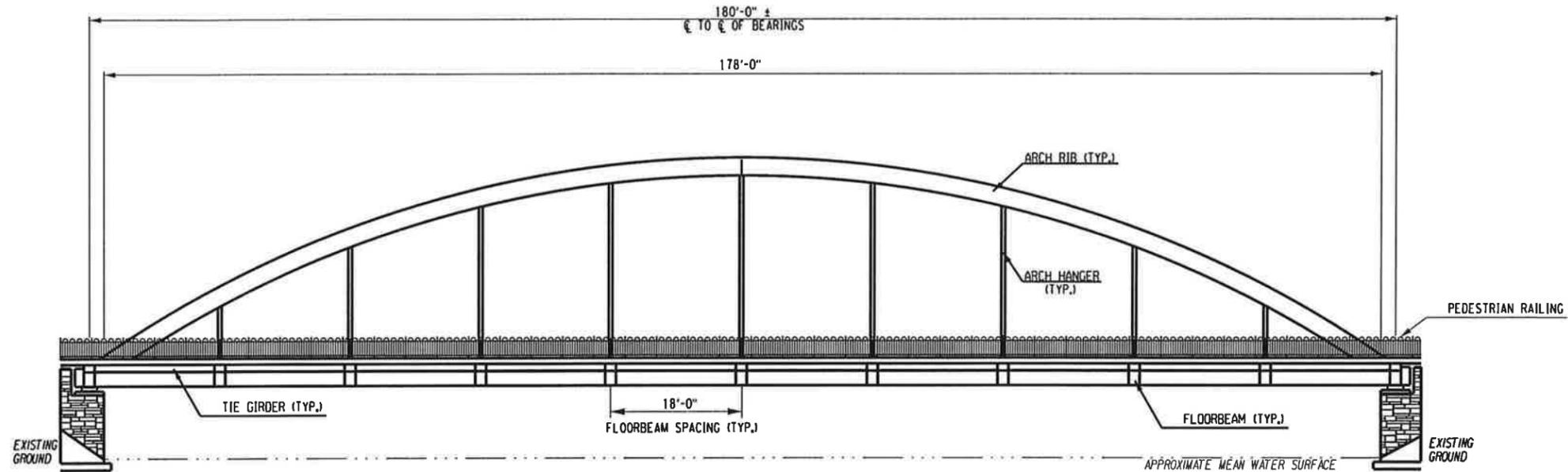


AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE PLAN	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (STEEL TIED ARCH)	DRAWING NO. A-22 SHEET NO. 1
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	



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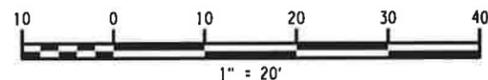
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 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 CHECK  
 JOB MANAGER  
 DESIGN SUPERVISOR



BRIDGE ELEVATION  
 STEEL TIED ARCH  
 (GREEN ISLAND TO GOAT ISLAND)

NOTES:

1. LIGHTING NOT SHOWN FOR VISUAL CLARITY
2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
3. ARCHITECTURAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (STEEL TIED ARCH)	DRAWING NO. A-22 SHEET NO. 2

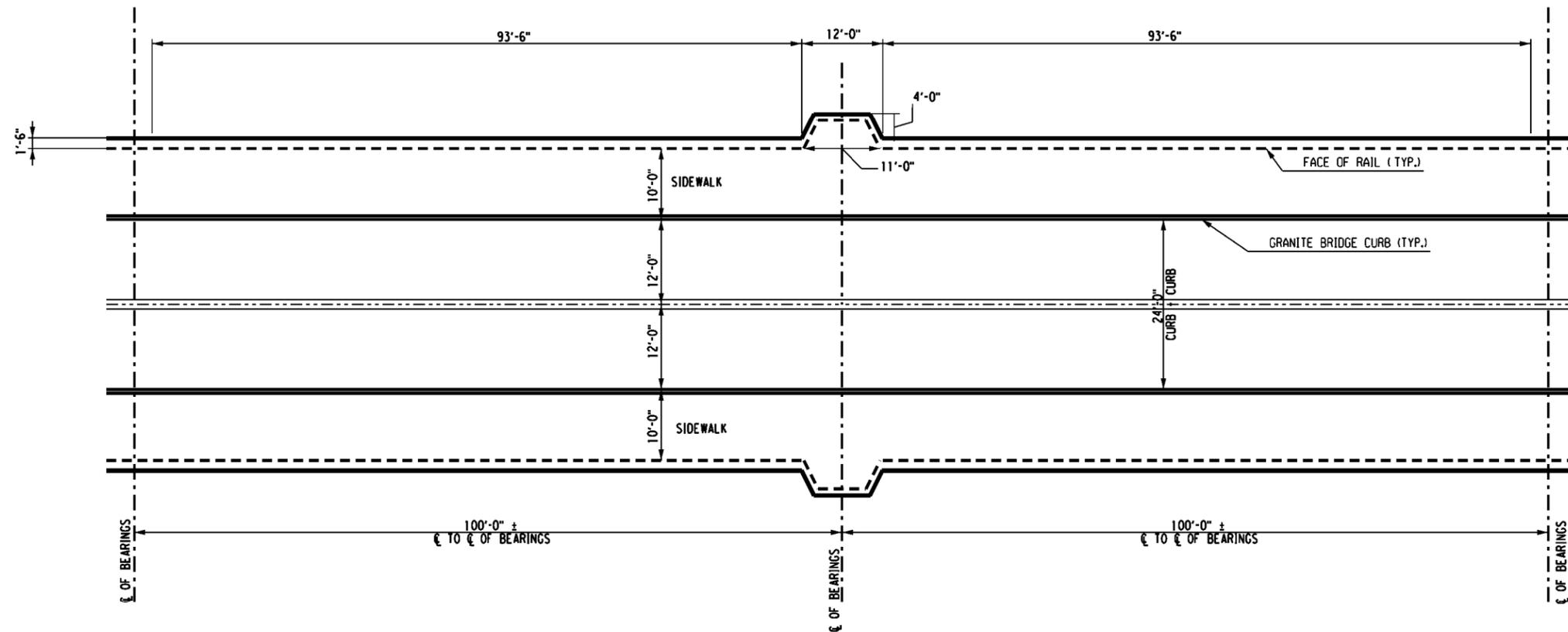
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

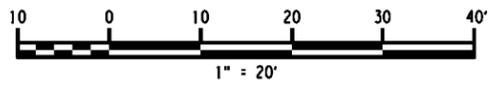
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 CHECK: CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK: CHECK  
 PROJECT MANAGER I. WOODBURY



BRIDGE PLAN  
 STEEL GIRDER  
 (GREEN ISLAND TO GOAT ISLAND)

AFFIX SEAL: ON:	ALTERED BY: ON:

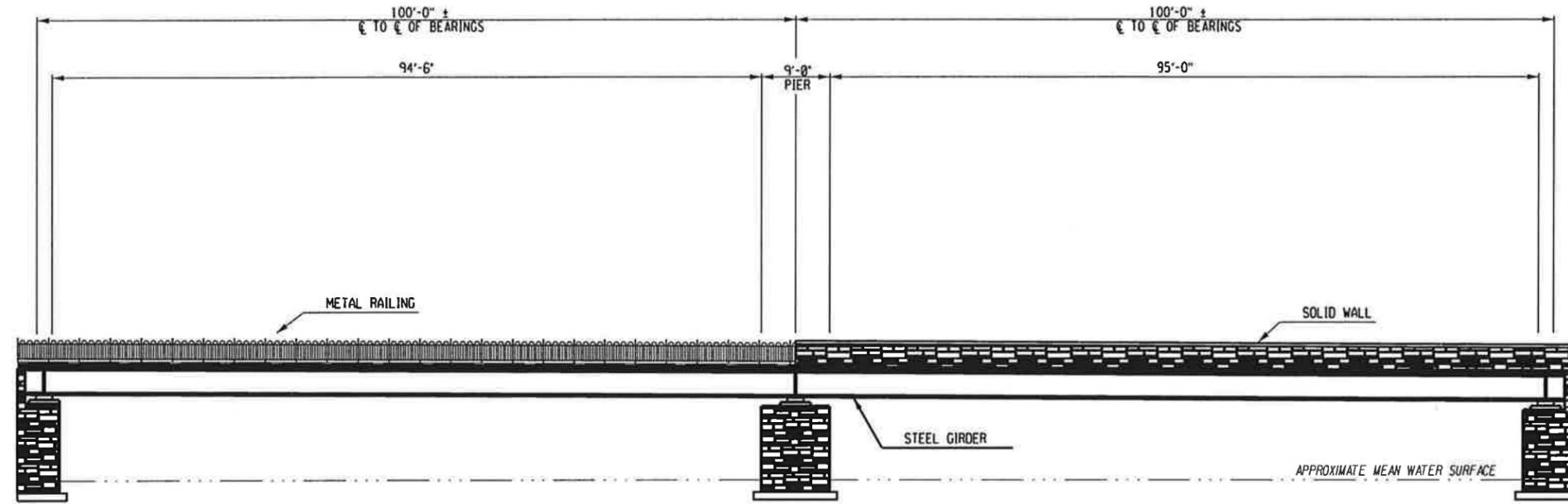


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					BRIDGE PLAN	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (STEEL GIRDER)	DRAWING NO. A-23 SHEET NO. 1
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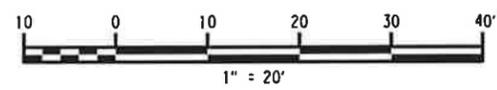
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DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGN B. CARLSON  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 PROJECT MANAGER T. WOODBURY



BRIDGE ELEVATION  
 STEEL GIRDER  
 (GREEN ISLAND TO GOAT ISLAND)

- NOTES:
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  2. ARCH DIMENSIONS SHOWN ARE FACE TO FACE OF SUBSTRUCTURES
  3. ARCHITECTURAL STONE TREATMENT COULD BE EITHER A CONCRETE FORMLINER OR EMBEDDED STONE VENEER



AFFIX SEAL: ON:	ALTERED BY: ON:

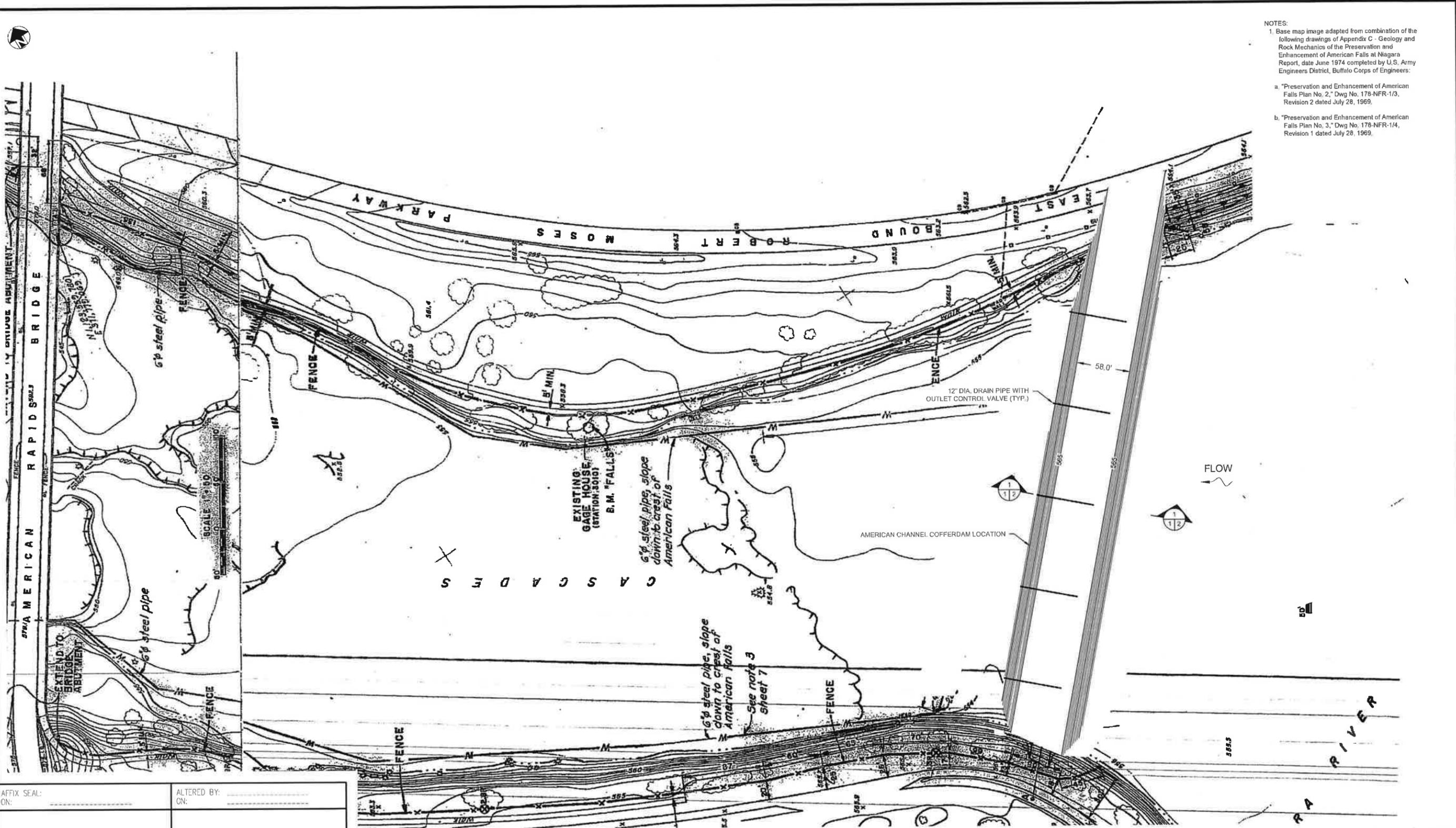
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					BRIDGE ELEVATION	
	COUNTY: NIAGARA				GREEN ISLAND TO GOAT ISLAND (STEEL GIRDER)	DRAWING NO. A-23 SHEET NO. 2

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER  
 CHECK  
 DRAFTING C.R.G.  
 CHECK M.J.M.  
 DESIGN A.J.M.  
 CHECK M.J.M.  
 JOB MANAGER  
 DESIGN SUPERVISOR M.J.M.



NOTES:  
 1. Base map image adapted from combination of the following drawings of Appendix C - Geology and Rock Mechanics of the Preservation and Enhancement of American Falls at Niagara Report, date June 1974 completed by U.S. Army Engineers District, Buffalo Corps of Engineers:  
 a. "Preservation and Enhancement of American Falls Plan No. 2," Dwg No. 178-NFR-1/3, Revision 2 dated July 28, 1969,  
 b. "Preservation and Enhancement of American Falls Plan No. 3," Dwg No. 178-NFR-1/4, Revision 1 dated July 28, 1969.

AFFIX SEAL:  
 ON: \_\_\_\_\_  
 ALTERED BY:  
 ON: \_\_\_\_\_

**1**  
**11**  
**AMERICAN CHANNEL COFFERDAM PLAN**  
 SCALE: 1" = 50'

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	COUNTY: NIAGARA				FULL CHANNEL 1969 COFFERDAM PLAN	
						DRAWING NO. A-24
						SHEET NO. 1 OF 2

**McMahon & Mann**  
 Consulting Engineers, P.C.  
200 MAIN STREET, SUITE 100  
 BUFFALO, NY 14203  
 TEL: (716) 848-8100  
 FAX: (716) 848-8104

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER

CHECK

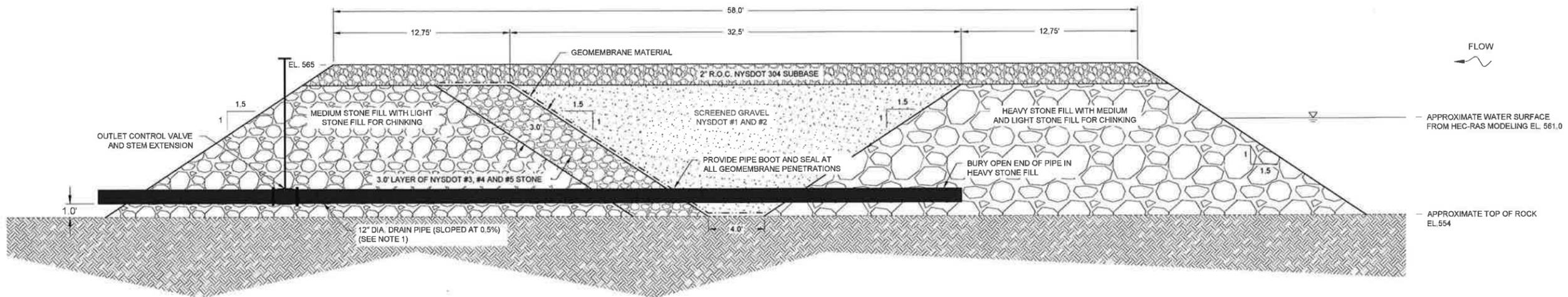
DRAFTING C.R.G.

CHECK M.J.M.

DESIGN A.J.N.

JOB MANAGER

H:\CAD\DRAWING\PROJECT\VP\Iceland Bridge\11025-017.dwg  
DESIGN SUPERVISOR M.J.M.



- NOTES:
1. Drain pipe size and number to be based on specified flow requirements for downstream channel.
  2. Cofferdam material and upstream water conditions must be monitored daily throughout construction.

**1**  
**1 2** COFFERDAM CROSS SECTION

AFFIX SEAL: CN: _____	ALTERED BY: CN: _____

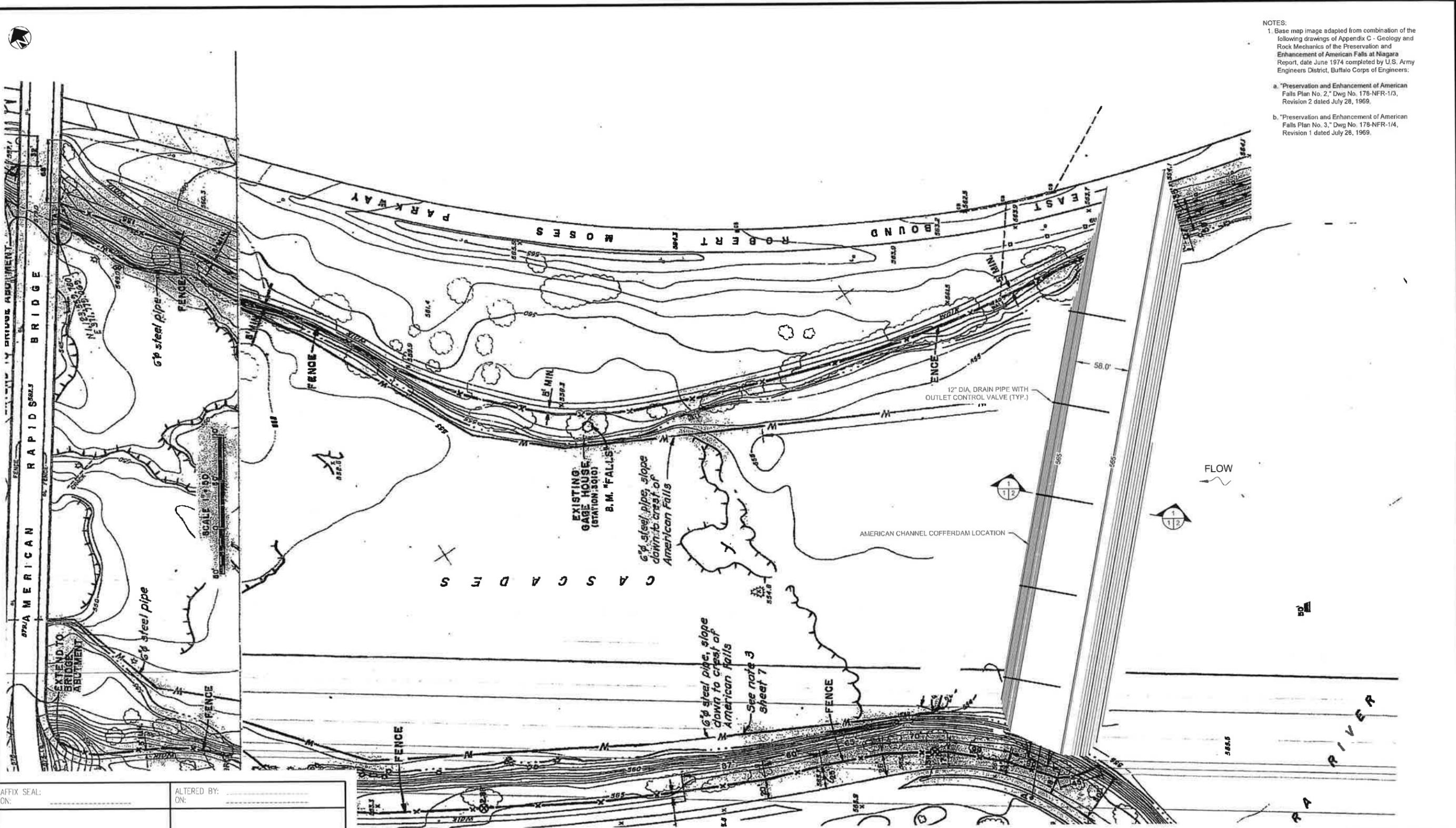
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					FULL CHANNEL 1969 COFFERDAM SECTION	
	COUNTY: NIAGARA					DRAWING NO. A-24
						SHEET NO. 2 OF 2

**McMahon & Mann**  
Consulting Engineers, P.C.  
390 N. MAIN STREET SUITE 217  
BUFFALO NY 14214  
TEL: 734-8400  
FAX: 734-844804

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PROJECT MANAGER  
 CHECK  
 DRAFTING C.R.G.  
 CHECK M.J.M.  
 DESIGN A.J.N.  
 JOB MANAGER  
 DESIGN SUPERVISOR M.J.M.



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AFFIX SEAL ON: \_\_\_\_\_  
 ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

1  
 11  
**AMERICAN CHANNEL COFFERDAM PLAN**  
 SCALE: 1" = 50'

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS: _____ _____ _____	AMERICAN FALLS BRIDGES	PIN 5/6040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	COUNTY: NIAGARA				FULL CHANNEL 1969 COFFERDAM PLAN WITH ICE PROTECTION	DRAWING NO. A-25 SHEET NO. 1 OF 2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**McMahon & Mann**  
 Consulting Engineers, P.C.  
ONE MAIN STREET SUITE 200  
 BUFFALO, NY 14203  
 TEL: 716.841.9017  
 FAX: 716.841.9924

PROJECT MANAGER

CHECK

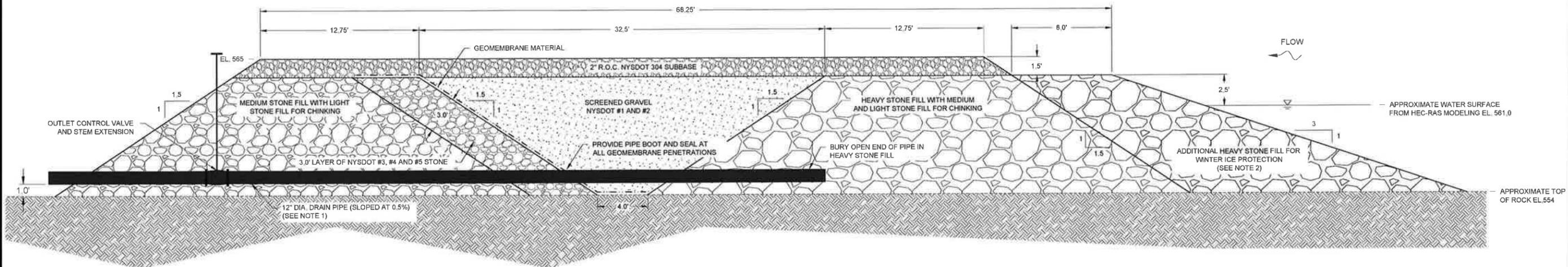
DRAFTING C.R.G.

CHECK M.J.M.

DESIGN A.J.M.

JOB MANAGER

DESIGN SUPERVISOR M.J.M.



- NOTES:
1. Drain pipe size and number to be based on specified flow requirements for downstream channel.
  2. Additional heavy stone fill is only required if cofferdam use is planned for winter work beyond December.
  3. Cofferdam material and upstream water / ice conditions must be monitored daily throughout construction.



**COFFERDAM CROSS SECTION**



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 552200G 5522010	CULVERTS NONE	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					FULL CHANNEL 1969 COFFERDAM SECTION WITH ICE PROTECTION	
	COUNTY: NIAGARA					DRAWING NO. A-25
						SHEET NO. 2 OF 2

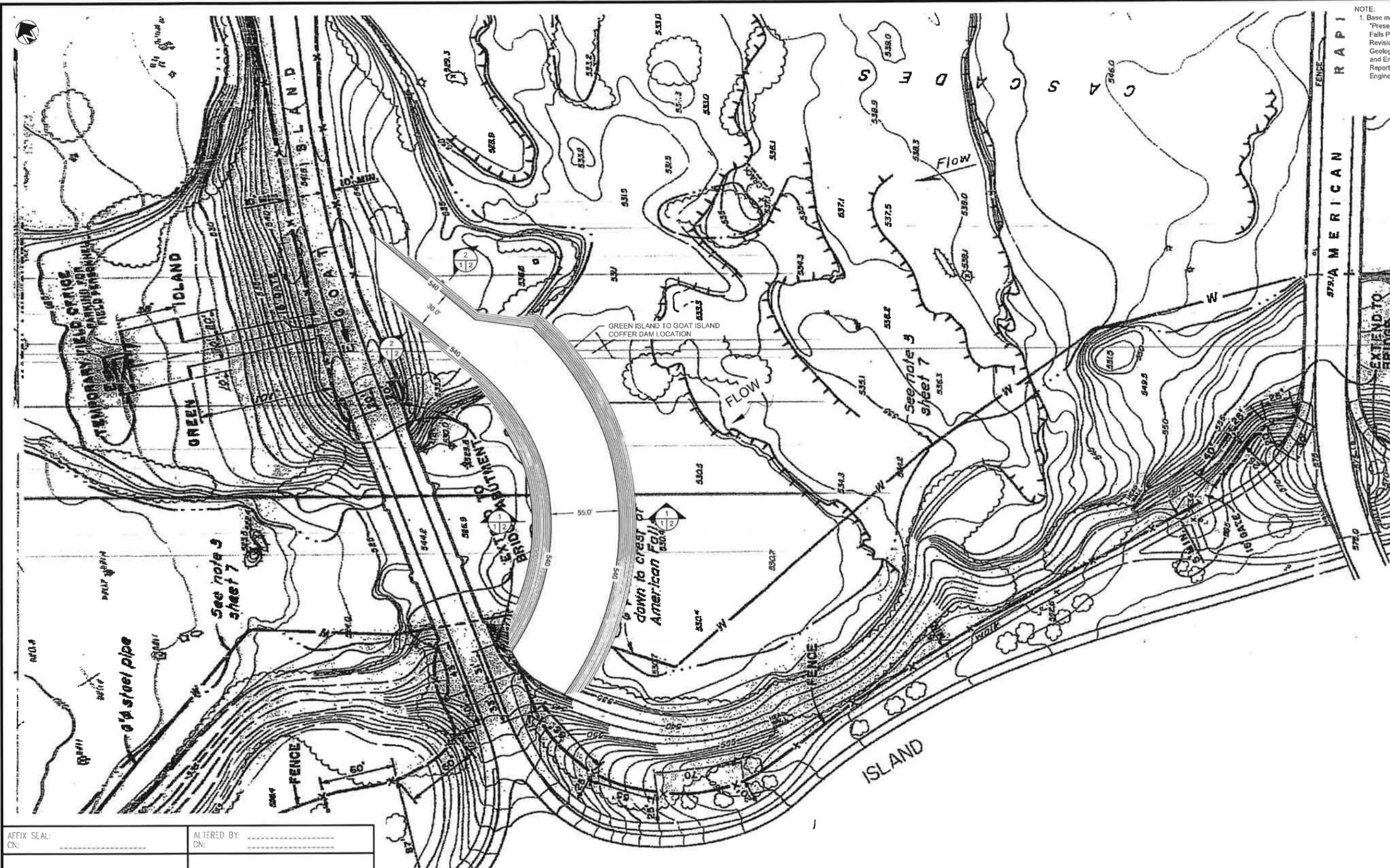
AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 552200G 5522010	CULVERTS NONE
COUNTY: NIAGARA			

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
FULL CHANNEL 1969 COFFERDAM SECTION WITH ICE PROTECTION	DRAWING NO. A-25
	SHEET NO. 2 OF 2

McMahon & Mann Consulting Engineers, P.C. 300 N. W. 100th St., Suite 205 Miami, FL 33157 Tel: (305) 554-4444 Fax: (305) 554-4444	NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

H:\CAD\DRAWING\PROJECT\GPI\Island Bridge\11025-001.dwg  
 DESIGN SUPERVISOR M.J.M.  
 DESIGN A.J.M.  
 CHECK M.J.M.  
 DRAFTING C.R.G.  
 CHECK  
 PROJECT MANAGER



NOTE:  
 1. Base map image adapted from drawing titled "Preservation and Enhancement of American Falls Plan No. 2," Dwg No. 178-NFR-1/3, Revision 2 dated July 28, 1969 of Appendix C - Geology and Rock Mechanics of the Preservation and Enhancement of American Falls at Niagara Report, date June 1974 completed by U.S. Army Engineers District, Buffalo Corps of Engineers.

AFFIX SEAL:  
 CN: \_\_\_\_\_  
 ALTERED BY:  
 CN: \_\_\_\_\_

**1 GREEN ISLAND TO GOAT ISLAND COFFERDAM PLAN**



AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

AMERICAN FALLS BRIDGES  
 PIN 576040  
 BRIDGES  
 5522C00  
 5522G10  
 CU\_VERTS  
 NONE  
 COUNTY: NIAGARA

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED  
 CONTRACT NUMBER  
 DRAWING NO. A-26  
 SHEET NO. 1 OF 2

McMahon & Mann  
 Consulting Engineers, P.C.  
 285 WEST STREET, SUITE 201  
 BUFFALO, NY 14204  
 TEL: 716/835-1100  
 FAX: 716/835-9014

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER

CHECK

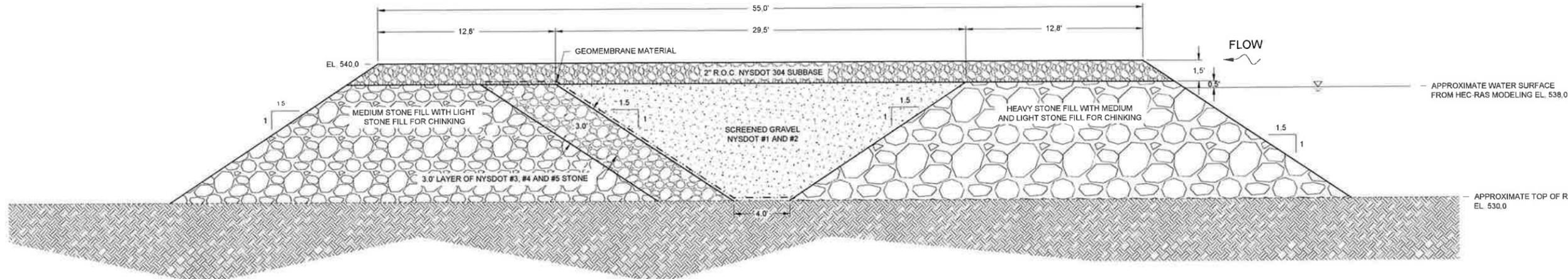
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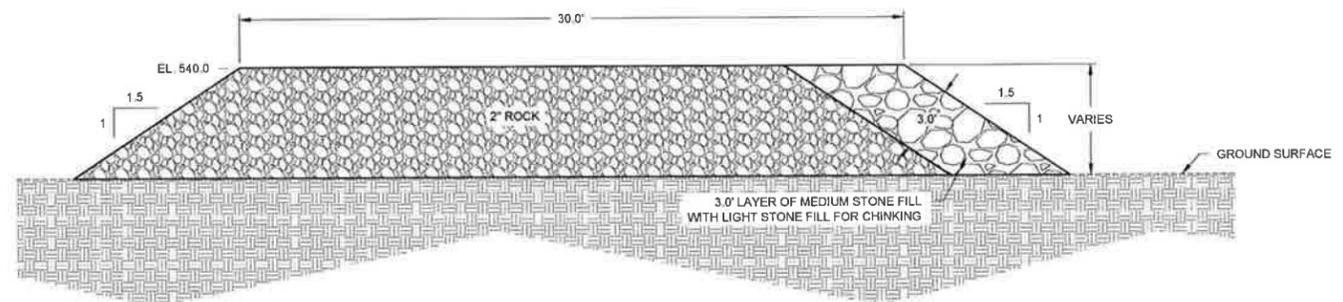
DESIGN A.J.N.

JOB MANAGER

DESIGN SUPERVISOR M.J.M.



**1**  
**1 2** COFFERDAM CROSS SECTION



**2**  
**1 2** COFFERDAM CROSS SECTION

AFFIX SEAL: CN: _____	ALTERED BY: ON: _____

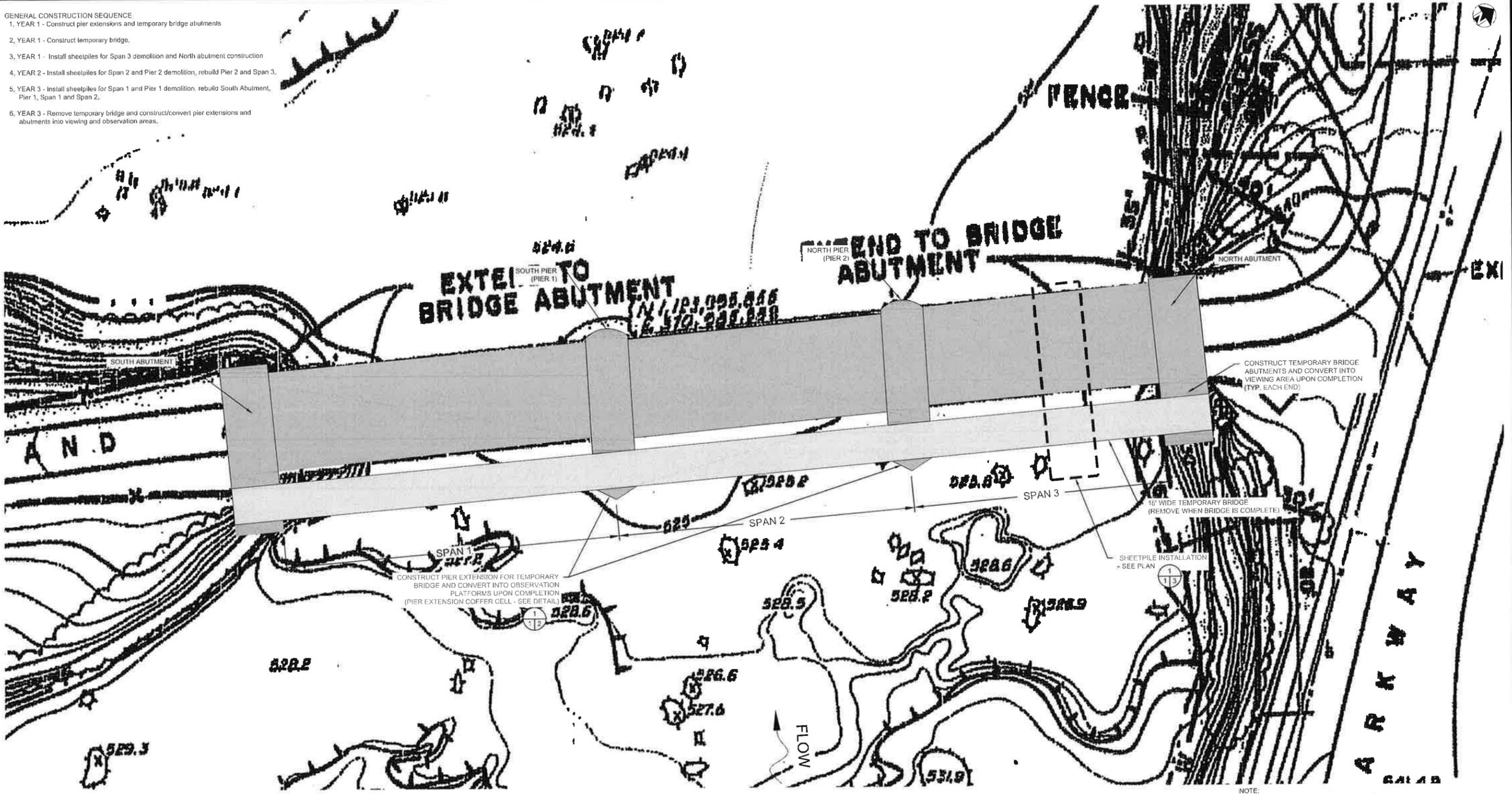
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 552200C 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT. UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					GREEN ISLAND TO GOAT ISLAND COFFERDAM SECTIONS	
	COUNTY: NIAGARA					DRAWING NO. A-26
						SHEET NO. 2 OF 2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**McMahon & Mann**  
Consulting Engineers, P.C.  
3400 MAIN STREET, SUITE 110  
SUFFERD, NY 14214  
TEL: 516-434-9037  
FAX: 516-434-9034

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

- GENERAL CONSTRUCTION SEQUENCE
1. YEAR 1 - Construct pier extensions and temporary bridge abutments
  2. YEAR 1 - Construct temporary bridge.
  3. YEAR 1 - Install sheetpiles for Span 3 demolition and North abutment construction
  4. YEAR 2 - Install sheetpiles for Span 2 and Pier 2 demolition, rebuild Pier 2 and Span 3.
  5. YEAR 3 - Install sheetpiles for Span 1 and Pier 1 demolition, rebuild South Abutment, Pier 1, Span 1 and Span 2.
  6. YEAR 3 - Remove temporary bridge and construct/convert pier extensions and abutments into viewing and observation areas.



NOTE:  
 1. Base map images adapted from drawing titled "Preservation and Enhancement of American Falls Plan No. 2," Dwg No. 178-NFR-1/3, Revision 2 dated July 28, 1969 of Appendix C - Geology and Rock Mechanics of the Preservation and Enhancement of American Falls at Niagara Report, date June 1974 completed by U.S. Army Engineers District, Buffalo Corps of Engineers.

PROJECT MANAGER  
 CHECK  
 DRAFTING C.R.G.  
 CHECK M.J.M.  
 DESIGN A.J.M.  
 JOB MANAGER  
 DESIGN SUPERVISOR M.J.M.

AFFIX SEAL: CN: _____	ALTERED BY: CN: _____																												
<table border="1"> <tr> <td>AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:</td> <td>AMERICAN FALLS BRIDGES</td> <td>PIN 576040</td> <td>BRIDGES 5522000 5522010</td> <td>CULVERTS NONE</td> <td>ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED</td> <td>CONTRACT NUMBER:</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td>MAINLAND TO GREEN ISLAND STRUCTURAL COFFERDAM PLAN</td> <td> </td> </tr> <tr> <td> </td> <td>COUNTY: NIAGARA</td> <td> </td> <td> </td> <td> </td> <td> </td> <td>DRAWING NO. A-27</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td>SHEET NO. 1 OF 3</td> </tr> </table>		AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER:						MAINLAND TO GREEN ISLAND STRUCTURAL COFFERDAM PLAN			COUNTY: NIAGARA					DRAWING NO. A-27							SHEET NO. 1 OF 3
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER:																							
					MAINLAND TO GREEN ISLAND STRUCTURAL COFFERDAM PLAN																								
	COUNTY: NIAGARA					DRAWING NO. A-27																							
						SHEET NO. 1 OF 3																							

1  
11  
 MAINLAND TO GREE ISLAND STRUCTURAL COFFERDAM PLAN

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED. THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**McMahon & Mann**  
 Consulting Engineers, P.C.  
300 WALK STREET SUITE 400  
 BUFFALO, NY 14204 FAX 716 844534

PROJECT MANAGER

CHECK

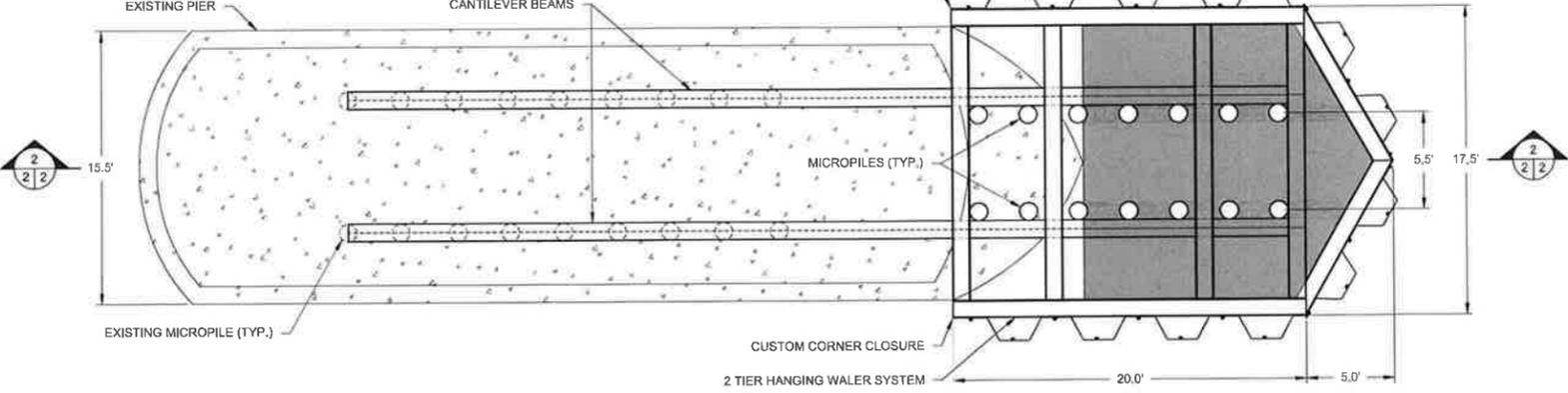
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CHECK M.J.M.

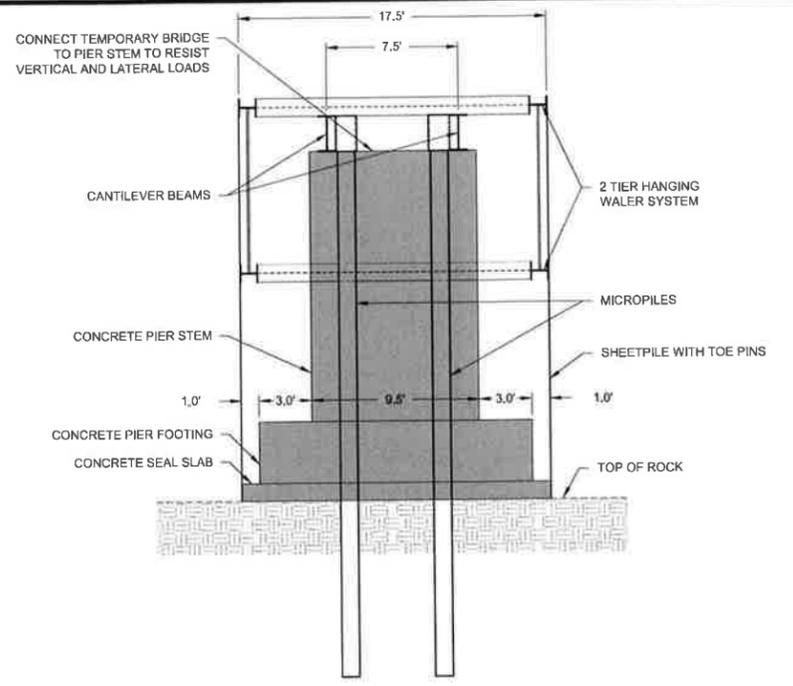
DESIGN A.J.N.

JOB MANAGER

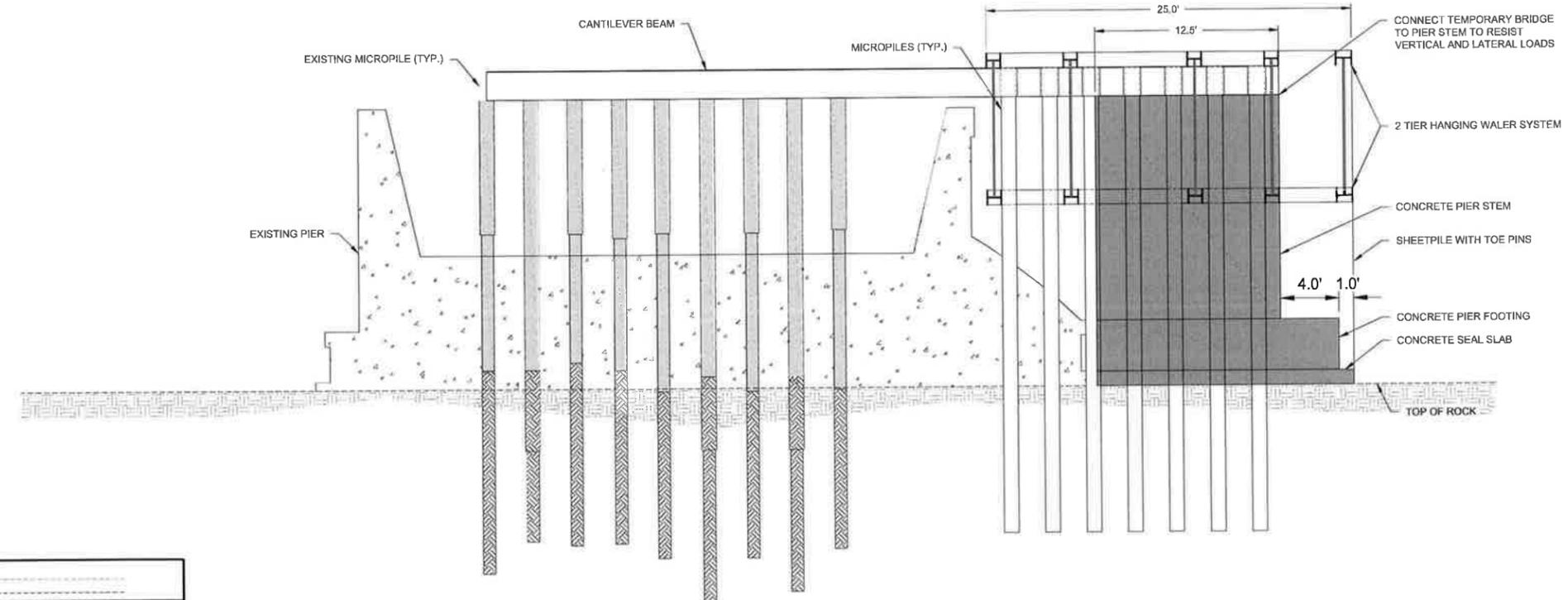
DESIGN SUPERVISOR M.J.M.



**1**  
1/2 **CONCEPTUAL PIER EXTENSION PLAN**  
SCALE: N.T.S.



**3**  
2/2 **CONCEPTUAL PIER EXTENSION SECTION 2**  
SCALE: N.T.S.



**2**  
2/2 **CONCEPTUAL PIER EXTENSION SECTION 1**  
SCALE: N.T.S.

AFFIX SEAL: \_\_\_\_\_  
CN: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
ON: \_\_\_\_\_

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PN 576040	BRIDGES 5522CGG 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					MAINLAND TO GREEN ISLAND STRUCTURAL COFFERDAM PLAN AND SECTIONS	DRAWING NO. A-27
	COUNTY: NIAGARA					SHEET NO. 2 OF 3

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION

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DOCUMENT NAME: DESIGN REPORT

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200 WOOD STREET SUITE 405  
SUFFERD AVENUE  
PARSONS, NEW YORK

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PROJECT MANAGER

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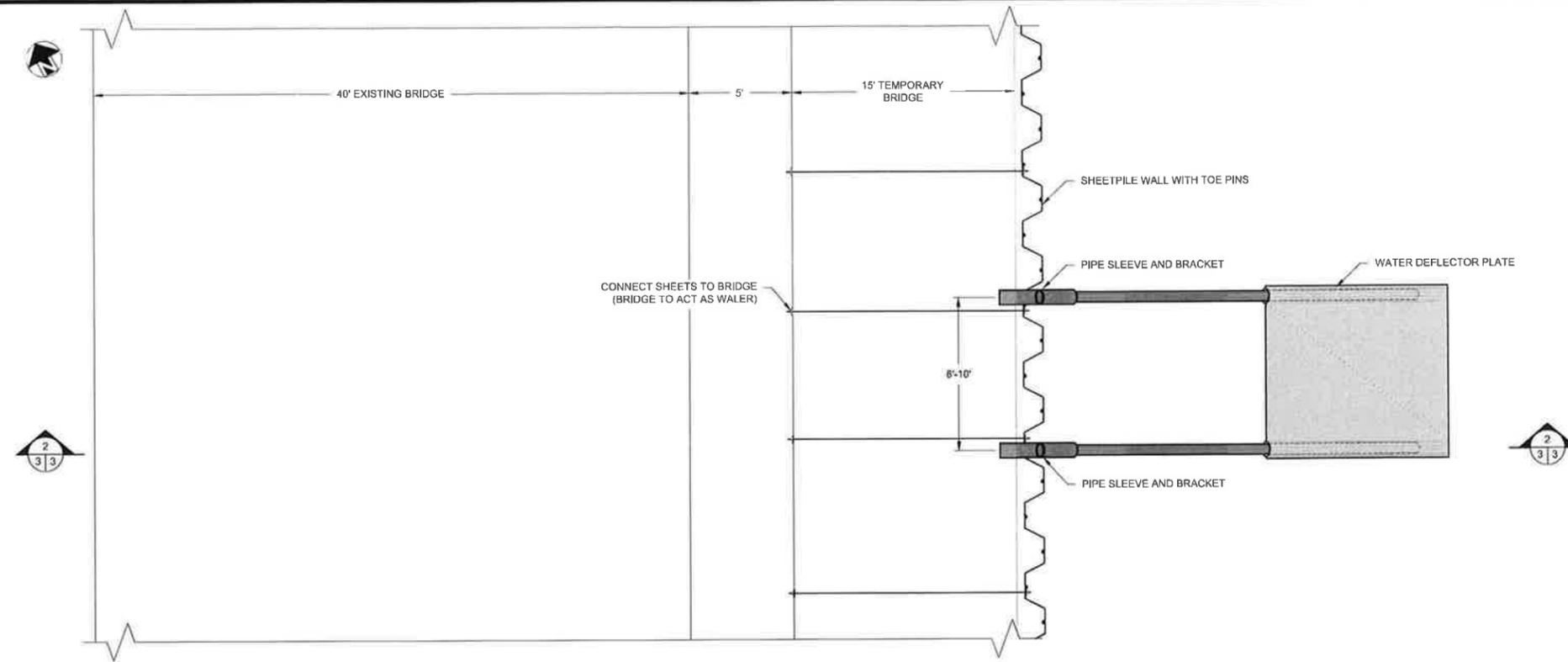
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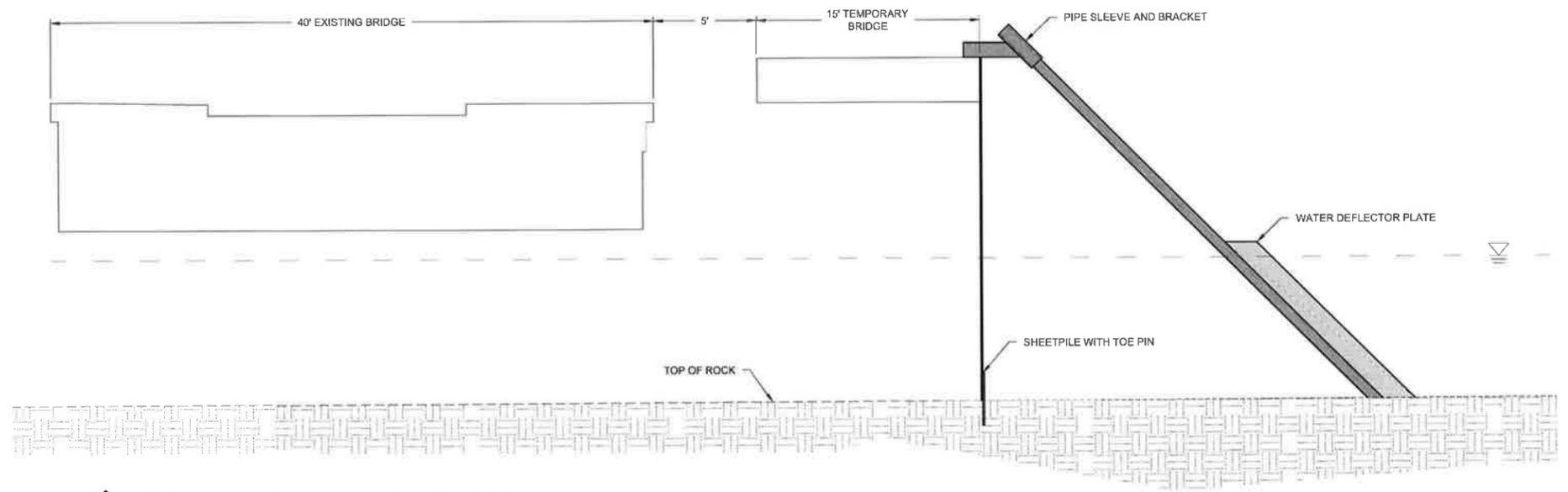
DESIGN A.J.N.

DESIGN SUPERVISOR M.J.M.

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**1 SHEETPILE INSTALLATION SECTION**  
SCALE: N.T.S.



**2 SHEETPILE INSTALLATION SECTION**  
SCALE: N.T.S.

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	P/N 576040	BRIDGES 552200C 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					MAINLAND TO GREEN ISLAND STRUCTURAL COFFERDAM SECTIONS	
	COUNTY: NIAGARA					DRAWING NO. A-27
						SHEET NO. 3 OF 3

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SHELTON STREET SUITE 400  
BUFFALO NY 14214 FAX (716) 854-8004

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

## APPENDIX B.

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### Environmental Information

Federal Environmental Approval Worksheet  
Summary of Draft Hazardous Waste and Contaminated Material Screening Report September 2014  
Niagara River Greenway Consistency Review Form  
Threatened & Endangered Species Correspondence  
Suitable Habitat Assessment Form - NLEB  
Visual Impact Assessment  
Draft Section 4(f) Evaluation

## APPENDIX B-1.

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### Federal Environmental Approval Worksheet

# Federal Environmental Approval Worksheet

PIN: 5760.40	Comp. by: Cameron Schulz	Date Comp.: 9/21/15	FUNDING TYPE: TBD
DESCRIPTION: Replacement of the American Falls Bridges (BIN 5522000 & 5522010) located over the American Rapids section of the Niagara River.			NEPA CLASS: III
			SEQR TYPE: Non-Type II
LOCALITY (Village, Town, City): City of Niagara Falls			COUNTY: Niagara

## Purpose of this Worksheet:

- Communicate project National Environmental Policy Act (NEPA) classification to Federal Highway Administration (FHWA).
- Identify additional required FHWA environmental determinations, approvals and/or concurrences required before the Categorical Exclusion (CE) determination can be made.
- Reflect the documentation in the Design Approval Document (DAD) and enable the approving authority (per PDM Exhibit 4-2) to make the CE determination.

**Categorical Exclusion (CE)** - a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency (40 CFR 1508.4). Actions that do not individually or cumulatively have a significant environmental effect are excluded from the requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (23 CFR 71.115(b)).

## Instructions (see also "FEAW\_Instructions.doc"):

Complete the worksheet prior to the end of Design Phase I. If project parameters or site condition changes result in potential resource impacts, re-do worksheet prior to Design Approval to confirm NEPA determination and recertify (on page 4).

## Step 1: Unusual Circumstances Threshold Determination – 23 CFR 771.117(b)

Any action which normally would be classified as a CE but could involve unusual circumstances (or even uncertainty) will require consultation with FHWA to determine if the CE classification is proper or whether an EA or EIS is required.

Do any, or the potential for any, unusual circumstances exist?

- |    |   |   |
|----|---|---|
| 1. | Significant environmental impacts;  | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |
| 2. | Substantial controversy on environmental grounds;   | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |
| 3. | Significant impact on properties protected by Section 4(f) of the DOT Act or Section 106 of the National Historic Preservation Act; or                  | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| 4. | Inconsistencies with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action. | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |

- **If yes to any** of the above, contact the Main Office Project Liaison (MOPL) (see PDM Exhibit 4-1). If after consultation with FHWA it is determined that the project cannot be progressed as a CE, **skip to step 4** and see PDM Chapter 4 for NEPA Class I (EIS) or Class III (EA) processing.
- **If no to all**, then this project qualifies as a Categorical Exclusion (CE); **proceed to step 2**.

# Federal Environmental Approval Worksheet

**Project ID Number:** 5760.40

## Step 2: Other FHWA environmental actions required prior to CE Determination

Classification as a CE does not exempt the project from further environmental review. Compliance with Federal Statutes, Regulations and Executive Orders (EO's) must be documented. Refer to the Department's Project Development Manual (PDM) and Environmental Manual (TEM) to determine the requirements.

2.1	Other required FHWA environmental independent determinations	FHWA Independent Determination and/or Concurrence Required & Received	Date determination/concurrence issued	FHWA Independent Determination and/or Concurrence not required or resource not present
		A	B	C
	EO 11990 Protection of Wetlands Individual Finding	<input type="checkbox"/>	Date Issued	<input checked="" type="checkbox"/>
	ESA Section 7 Threatened and Endangered Species	<input checked="" type="checkbox"/>	Date Issued	<input type="checkbox"/>
	Section 106 (National Historic Preservation Act)	<input checked="" type="checkbox"/>	Date Issued	<input type="checkbox"/>
	4(f) (Park, Wildlife Refuge, Historic Sites, and National Wild and Scenic Rivers)	<input checked="" type="checkbox"/>	Date Issued	<input type="checkbox"/>
2.2	Other FHWA environmental compliance and/or approvals/concurrence required	Resource present and threshold exceeded		Resource not present, or present but threshold not exceeded
	EO 11988 Floodplains	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	EO 13112 Invasive Species	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	EO 12898 Environmental Justice	<input checked="" type="checkbox"/>		<input type="checkbox"/>
	Safe Drinking Water Act Section 1424(e)	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	U.S. Army Corps of Engineers, Section 404/10 NW 23	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	Section 6(f) (Land and Water Conservation Funds)	<input checked="" type="checkbox"/>		<input type="checkbox"/>
	Migratory Bird Treaty Act	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	23CFR772 Type I Noise abatement	<input type="checkbox"/>		<input checked="" type="checkbox"/>
2.3	Other Environmental Issues requiring FHWA notification	Resource present and threshold exceeded		Resource not present, or present but threshold not exceeded
	U.S. Army Corps of Engineers, Section 404/10 Individual Permit	<input checked="" type="checkbox"/>		<input type="checkbox"/>
	National Wild and Scenic Rivers	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	U.S. Coast Guard Bridge Permit	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	Known hazardous waste site (only EPA National Priority list)	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	Project on or affecting Native American Lands	<input type="checkbox"/>		<input checked="" type="checkbox"/>

For all categories above, refer to the **Table Thresholds** document.

**After completion of Tables 2.1, 2.2, and 2.3, proceed to step 3.**

# Federal Environmental Approval Worksheet

**Project ID Number:** 5760.40

### Step 3: Who makes the NEPA CE Determination?

FHWA Regulations describe two types of CEs; CEs listed in 23 CFR 771.117(c) [aka the C list], and CEs such as those listed in 23 CFR 771.117 (d) [aka the D list]. NYSDOT can make the CE determination for C list projects once all required approvals and concurrences have been secured. NEPA determination for d list projects has been retained by FHWA. NYSDOT can also make the CE determination where a project meets the [July 15, 1996 FHWA NY Division NEPA Programmatic Categorical Exclusion memo criteria](#). To determine by whom, FHWA or NYSDOT, and how the CE determination is made, follow the instructions beginning in section 3.1 of the following table.

	CONDITION	ACTION
3	<b>Determine whether FHWA or NYSDOT makes the CE determination.</b>	
3.1	<p>If the project is an action that would normally be a CE in 23 CFR 771.117(c) (see the drop down list), check the "Yes" box. If not, check the "No" box.</p>	<p>If yes, NYSDOT can make the CE determination once all the approvals and coordinations required are complete.</p> <p>1. Is the project an action that would normally be a CE in <a href="#">23 CFR 771.117(c)</a>?  <b>YES</b> <input type="checkbox"/> <b>NO</b> <input type="checkbox"/> Choose an item.</p> <p><b>If no, proceed to step 3.2.</b></p> <p><b>If yes, and the action falls under (c)(26), (c)(27), or (c)(28), proceed to step 3.1.1.</b> Otherwise, <b>proceed to step 3.1.2.</b></p>
3.1.1	<p>Determine if any additional constraints apply to the CE.</p>	<p>Do ANY of the conditions described in the <b>Table Thresholds 3.1.1</b> (land acquisition, major traffic disruptions, changes in access control, floodplain encroachment, National Wild &amp; Scenic Rivers) apply to the action? <b>YES</b> <input type="checkbox"/> <b>NO</b> <input type="checkbox"/></p> <p><b>If yes, the (c)(26), (c)(27) and (c)(28) constraints have not been met – proceed to step 3.2.</b></p> <p><b>If no, do ANY of the following apply:</b></p> <ul style="list-style-type: none"> <li>• A check in Column A in Table 2.1 for Section 106, <b>and</b> a finding of Adverse Effect?</li> <li>• A check in Column A in Table 2.1 for 4(f), <b>and</b> impacts are not de minimis?</li> <li>• A check in Column A in Table 2.3 for Section 404/10?</li> <li>• A check in Column A in Table 2.3 for USCG Bridge Permit?</li> </ul> <p>Do ANY of the above apply to the action? <b>YES</b> <input type="checkbox"/> <b>NO</b> <input type="checkbox"/></p> <p><b>If yes, the (c)(26), (c)(27) and (c)(28) constraints have not been met – proceed to step 3.2.</b></p> <p><b>If no, the (c)(26), (c)(27) and (c)(28) constraints have been met – proceed to step 3.1.2.</b></p>

# Federal Environmental Approval Worksheet

**Project ID Number:** 5760.40

3.1.2	Determine if <b>any</b> of the required environmental determinations, compliance and/or approvals/ concurrences are outstanding.	<p>If there are:</p> <ul style="list-style-type: none"> <li>outstanding environmental determinations (Table 2.1:checks in column A without dates in column B)</li> <li><b>and/or</b> circumstances requiring demonstration of applicable EO compliance or issues requiring FHWA environmental review (checks in column A in Table 2.2)</li> </ul> <p><b>The project will use Memo Shell 2</b> (FHWA needs to review this project).  <b>Proceed to step 4.</b></p> <p><i>If the project does not meet the conditions above proceed to step 3.1.3.</i></p>
3.1.3	Determine if <b>any</b> issues are present that require FHWA notification.	<p>If there are:</p> <ul style="list-style-type: none"> <li>any issues requiring FHWA environmental notification (checks in column A in Table 2.3); then</li> </ul> <p><b>The project will use Memo Shell 3</b> (FHWA must be notified of this project).  <b>Proceed to step 4.</b></p> <p><i>If the project does not meet the conditions above proceed to step 3.1.4.</i></p>
3.1.4	No Determinations, Approvals, Concurrences or Notifications required.	<p><b>The project will use Memo Shell 1</b> (memo to file).  <b>Proceed to step 4.</b></p>
3.2	The project is a D list CE as per 23 CFR 771.117(d). Choose appropriate entry from drop down list. If "other" or (d)(13) provide an explanation.	<p>Certain actions eligible for categorical exclusion require NYSDOT to transmit documentation and a determination that a CE applies. Examples of activities that may proceed as a CE are listed in <a href="#">23 CFR 771.117(d)</a> (D list). Activities not directly listed on the D List also have the potential to proceed as a CE with submitted documentation (Other). Activities that may normally be classified as a C-list CE under 23 CFR 771.117(c)(26), (c)(27), or (c)(28) must meet the constraints at <a href="#">23 CFR 771.117(e)</a>, or they revert to the D-list as (d)(13).</p> <p>The project is an action that would normally be a CE in 23 CFR 771.117(d).  <b>Choose an item .</b>          Other or (d)(13): provide explanation here</p> <p><b>Proceed to step 3.2.1.</b></p>
3.2.1	Determine if <b>any</b> of the required environmental determinations, compliance and/or approvals/ concurrences are outstanding <b>and/or</b> notification is required.	<p>If there are:</p> <ul style="list-style-type: none"> <li><b>any</b> outstanding environmental determinations (any checks in column A without dates in column B in Table 2.1);</li> <li><b>and/or</b> any circumstances requiring demonstration of applicable EO compliance (any checks in column A in Table 2.2);</li> <li><b>and/or</b> issues requiring FHWA environmental notification (any checks in column A in Table 2.3); then</li> </ul> <p><b>The project will use Memo Shell 4</b> (MOPL and FHWA need to review this project).  <b>Proceed to Step 4.</b></p>
3.2.2	Design Approval Document sent to FHWA	<p>If the project:</p> <ul style="list-style-type: none"> <li>does not meet the conditions above (3.2.1), then the project has met the criteria established as per the programmatic agreement dated July 15, 1996.</li> </ul> <p><b>The project will use Memo Shell 5</b> (memo to file).  <b>Proceed to Step 4.</b></p>

# Federal Environmental Approval Worksheet

Project ID Number: 5760.40

## Step 4: Summary and Recommendation

- This project does not qualify to be progressed as a Categorical Exclusion.
- The NEPA Determination is being made by FHWA
- All outstanding FHWA environmental approvals will be obtained and are listed here:  
List outstanding FHWA environmental approvals here:

All other environmental, social and economic factors that affect the project's NEPA classification, as per 23 CFR 771.117 and the July 1996 FHWA NY Division NEPA Programmatic Categorical Exclusion memo must still be addressed, for example the project: does not change the functional class; does not add mainline capacity; is not on new location; will not change travel patterns; acquires only minor amounts of ROW (temporary or permanent); does not cause displacements; does not change access control; is air quality exempt; is consistent with the NYS Coastal Management Program; and the analysis and requirements of the Farmland Protection Policy Act have been satisfied.

**I certify that the information provided above is true and accurate and recommend the project be processed as described above.**

Project Manager/Designer C. S. Mozrall Date 9/22/15  
(or Responsible Local Official)

Print Name and Title: Craig S. Mozrall, Region 5 Special Projects Manager

Regional Environmental Unit Supervisor Kimberly A. Lorenz Date 9/22/15

Print Name and Title: Kimberly A. Lorenz, Region 5 Landscape/Environmental Unit Manager

Regional Local Project Liaison \_\_\_\_\_ Date \_\_\_\_\_  
(Locally Administered Projects Only)

Print Name and Title: \_\_\_\_\_

Changes that may have occurred since the preparation of the worksheet which would **create the need to go through the Worksheet again** include but are not limited to: a change in the scope of the proposed project; a change in the social, economic or environmental circumstances or the setting of the project study area (i.e. the affected environment); a change in the federal statutory environmental standards; discovering new information not considered in the original process; and a significant amount of time has passed (equal or greater than three years).

## **APPENDIX B-2.**

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### Summary of Draft Hazardous Waste and Contaminated Material Screening Report September 2014

## EXECUTIVE SUMMARY

A Hazardous Waste/Contaminated Materials Screening was conducted for the project corridor: American Falls Bridges over the Niagara River. This screening included review of available records and a project corridor walkover which was conducted on July 14, 2014. The purpose of this screening is to identify potential areas of environmental concern that may be disturbed during construction.

This screening yielded five sites of potential environmental concern. Based on current design, the following conclusions and recommendations are made:

### 1. The Mainland Site:

- a. Historic Land Use - This site was historically used as an industrial and commercial area. Approximately 150 buildings and multiple power production raceways were demolished to create the current Niagara Falls State Park. Potentially contaminated materials at this site relative to the industrial and commercial use, as well as potentially contaminated materials as a result of the demolition of previously existing structures is a concern at this site.
- b. Fill Importation - This site has been subject to extensive fill importation over the course of more than 80 years from 1885 to the late 1960's. The origin of these fill materials is unknown, and previous test pit surveys conducted throughout the area of potential impact indicate that potentially contaminated fill materials do exist at this site.

### 2. The Green Island site:

- a. Historic Land Use - This site was historically used by a paper mill from 1823 to 1885. Soon after the incorporation of Green Island into the current Niagara Falls State Park, the paper mill buildings were either demolished or razed into their own foundations. Potentially contaminated materials at this site relative to the paper mill, as well as potentially contaminated materials as a result of the demolition of previously existing structures are a concern.
- b. Fill Importation - The site has also been subject to extensive fill importation. The origin of these fill materials is unknown, and previous test pit surveys conducted throughout the area of potential impact indicate that potentially contaminated fill materials do exist at this site.

### 3. The Goat Island Site:

- a. Historic Land Use - Goat Island remained predominantly undeveloped before it was purchased by the park. Fill and grading at this site is minimal compared to Green Island and the Mainland, however imported fill materials of unknown age and origin are still a concern.
- b. NYSDEC Spill Record - Although the NYSDEC spill #9706671 is reported as being closed, there is no documentation of the specific location of this incident, or whether

remedial action was conducted. It was reported that the storage tank was isolated at the maintenance garage; however, there is no indication within the report as to whether the tank was removed from the area of the garage or was transported there to be isolated. There is the potential for petroleum contamination to exist within the area of potential impact at this site.

**4. Proposed Cofferdam Location Site:**

- a. Fill Importation - The presence of unknown fill materials is a concern relative to the history of extensive contour modification at other locations of concern within the park, and the extension of the eastern end of Goat Island between 1938 and 1963.

**5. American Falls Bridges Site:**

- a. Fill Importation - Based on available record plan review, it was determined that the existing bridges contain earth fill of unknown age and origin. Review of previous Geotechnical Boring Logs indicates that potentially contaminated fill materials do exist at this site.

Technically-enhanced naturally occurring radioactive material (TENORM) has historically been widely used in the Niagara Falls area as fill and bedding material for roadway and driveway projects. This material has been previously described as “slag”. The 1983 Cultural Resources Report indicates the presence of slag in multiple test pits throughout the project area. It is recommended that a full radiological survey of all four sites be conducted throughout the proposed area of potential impact for this project.

Additionally, for any soils that will be exported from the site during the replacement of the bridges, it is recommended that soil samples be collected and analyzed for RCRA metals and semi-volatile organic compounds (SVOC's) to facilitate proper disposal.

The report discusses the complete findings of the Hazardous Waste/Contaminated Materials Screening.

## APPENDIX B-3.

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### Niagara River Greenway Consistency Review Form

**NIAGARA RIVER GREENWAY CONSISTENCY REVIEW FORM (NRGCRF)**

**PIN:** 5760.40

**PIN:** 5760.40 **COUNTY:** NIAGARA

**PROJECT DESCRIPTION:** THE AMERICAN FALLS BRIDGES

**DESIGN JOB MANAGER:** C. SCHULZ

**PREPARED BY:** M. JURKOWSKI **DATE:** OCT 21, 2013

Where the form asks for an explanation make a brief yet complete, contemporaneous record that documents the reason(s) behind the reviewer's answer. The explanation should refer to any studies, evaluations, analyses, or considerations that weighed in decision. The numbers following each question in parenthesis refers to the page numbers of the April 4, 2007 plan approved on May 17, 2007 Niagara River Greenway Plan where further description can be found.

***Niagara River Greenway Vision Statement***

Will the proposed action support the Niagara River Greenway's Vision (pg. 19)? Explain:

The Vision of the Niagara River Greenway is that of a "world-class corridor of places, parks, and landscapes that... provides access to and connections between these important resources while giving rise to economic opportunities for the region."

The scenic reservation was established by New York State in 1885, and in 1887 Frederick Law Olmsted, along with his colleague Calvert Vaux, prepared a master plan for the preservation and enhancement of the natural landscape and scenery surrounding Niagara Falls, along with the islands and river rapids above the falls.

Any of the build alternatives are consistent with both the Niagara River Greenway Vision and the 1887 Olmsted/Vaux Plan. The bridges will be either restored/replaced on existing alignment or reconstructed slightly downstream of the existing location. The most noticeable change will be the removal of the temporary Mabey truss structures. These structures add visual elements to the park which are not in keeping with the original intent of the park and are at visually incompatible with the overall context of the park setting. Any new bridge design will be selected to reflect and enhance the context of the park.

Other noticeable changes are expected to occur at the bridge touchdown locations. Vegetation will be removed for construction of the bridges. Also, locations for the staging of equipment may require the removal of vegetation. These areas will be kept to as minimal a footprint as feasible. Any areas cleared will be re-established with vegetation in keeping with the intent of the Niagara Falls State Park Landscape Improvement Plan.

***Niagara River Greenway Principles***

Will the proposed action support the Niagara River Greenway's Principles (pg. 22)? Explain:

The Niagara Greenway principles present a guide to actions and development within the Niagara River Greenway over the long-term, so that the cumulative effect of projects is to move toward achieving the shared vision for the Niagara River Greenway. They promote access and connections, including trail linkages. They support high quality, ecologically-sound projects throughout the region. They are fundamental enough to remain relevant over changing circumstances, providing consistency with flexibility.

**NIAGARA RIVER GREENWAY CONSISTENCY REVIEW FORM (NRGRF)**

**PIN:** 5760.40

The proposed action supports multiple Niagara Greenway Principles, including: **Accessibility** and **Connectivity** (by improving pedestrian access to Goat Island and restoring ADA accessibility and trolley service to the crossing); **Restoration** (improving the crossing consistent with the vision of the State Parks Master Plan); and **Partnerships** (via coordination with Niagara Falls State Parks).

***Niagara River Greenway Goals***

Will the proposed action support the Niagara River Greenway's Goals (pg. 22-25)? Explain:

The proposed action is consistent with multiple goals in the Niagara Greenway Plan, including: **Improving Access** and **Making Connections** (by restoring ADA accessibility and well-defined pedestrian walkway areas to the crossing, and restoring trolley service to the crossing); **Celebrate History and Heritage** and **Extend Olmsted's Legacy** (by making improvements consistent with the State Park's 1982 Master Plan and 2012 Landscape Improvements Plan, and the 1887 Olmsted/Vaux Plan); and **Promote Long Term Sustainability** (by rehabilitation and improvement of aging facilities).

***Niagara River Greenway Criteria***

Will the proposed action support the Niagara River Greenway's Criteria (pg. 27-35)? Explain:

The proposed action supports multiple Niagara River Greenway Criteria. The project is consistent with **Principles of the Niagara River Greenway** (see first question). The project also supports specific **Priorities** for the Greenway, *improving access to waterfront resources*, and *development of an integrated trail and park system*. In addition, the location of the project in relation to the Niagara River is consistent with the Greenway's **Focus Area**, - projects immediately adjacent to the River (and projects that establish strong linkages to the River).

***Summary and Conclusion:***

Based on answers above prepare a Summary Statement for the DAD:

Any of the project's build alternatives are consistent with the vision set forth in the Niagara River Greenway Plan. Specifically, the project will result in the removal of the temporary Mabey truss structure on top of the existing structure, which adds visual elements to the park which are not in keeping with the original intent of the park and are at visually incompatible with the overall context of the park setting. Any new bridge design will be selected to reflect and enhance the context of the park, and will be consistent with the State Park's 1982 Master Plan and 2012 Landscape Improvements Plan, and the 1887 Olmsted/Vaux Plan. In addition, the new/reconstructed bridges will improve waterfront access by improving the pedestrian crossing (both visually and functionally), restoring ADA accessibility, and restoring trolley service to the crossing. Finally, this project promotes long term sustainability of the Greenway by rehabilitating and improving an important Greenway resource.

## **APPENDIX B-4.**

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### Threatened & Endangered Species Correspondence



**ecology and environment, inc.**  
**CONTACT REPORT**

Meeting [ ] Telephone [X] Other [ ]

COMPANY/AGENCY: New York State Dept. of Environmental Conservation

PERSON(S): Connie Adams Wildlife Biologist

ADDRESS: 270 Michigan Ave Buffalo, NY

PHONE: 716-851-7000

E-MAIL:

TO: J Griffis, D. McCloe, & C. Sadowski

FROM: Joe Galati

DATE: 9/4/14

ATTENDEES:

CC:

**SUBJECT:** Niagara Falls Bridges – Wildlife resources in the project areas and possible concerns/impacts.

**SUMMARY:** She detailed what species may either inhabit or utilize the habitats in the project areas. She determined that most all species would only experience a temporary minor impact.

**DETAILS:**

Peregrine falcons, ospreys and bald eagles may utilize the area but do not nest in the project area.

Shore birds in the area would only experience temporary displacement with no lasting impacts.

N. long eared bat should be surveyed in the project area.

Ducks would also experience temporary displacement with no lasting impacts.

**ACTION ITEMS:**

None at this time

U.S. Fish & Wildlife Service

# American Falls Bridges Project

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## *IPaC Trust Resource Report*

Generated July 09, 2015 07:57 AM MDT



US Fish &amp; Wildlife Service

# IPaC Trust Resource Report



## Project Description

**NAME**

American Falls Bridges Project

**PROJECT CODE**

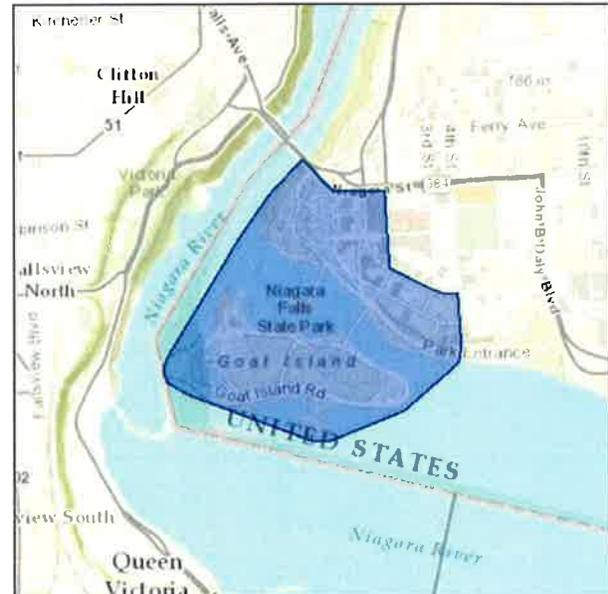
5RWSL-KKD5R-GJXH5-SBGUK-R2XKIQ

**LOCATION**

Niagara County, New York

**DESCRIPTION**

The purpose of this project is to build safe, structurally sound bridges that provide multi-modal access between Mainland USA, Green Island, and Goat Island within Niagara Falls State Park located in the City of Niagara Falls, Niagara County, NY.



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

**New York Ecological Services Field Office**

3817 Luker Road

Cortland, NY 13045-9349

(607) 753-9334

## Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

## Mammals

**Northern Long-eared Bat** *Myotis septentrionalis*

Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=A0JE>

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

## Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<p><b>American Bittern</b> <i>Botaurus lentiginosus</i>            Season: Breeding  <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B0F3">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B0F3</a></p>	Bird of conservation concern
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>            Year-round  <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B008">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B008</a></p>	Bird of conservation concern
<p><b>Black Tern</b> <i>Chlidonias niger</i>            Season: Breeding  <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B09F">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B09F</a></p>	Bird of conservation concern
<p><b>Black-crowned Night-heron</b> <i>Nycticorax nycticorax</i>            Season: Breeding  <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B0EU">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B0EU</a></p>	Bird of conservation concern
<p><b>Blue-winged Warbler</b> <i>Vermivora pinus</i>            Season: Breeding</p>	Bird of conservation concern
<p><b>Cerulean Warbler</b> <i>Dendroica cerulea</i>            Season: Breeding  <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B09I">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B09I</a></p>	Bird of conservation concern
<p><b>Golden-winged Warbler</b> <i>Vermivora chrysoptera</i>            Season: Breeding  <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B0G4">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B0G4</a></p>	Bird of conservation concern
<p><b>Least Bittern</b> <i>Ixobrychus exilis</i>            Season: Breeding</p>	Bird of conservation concern
<p><b>Pied-billed Grebe</b> <i>Podilymbus podiceps</i>            Season: Breeding</p>	Bird of conservation concern
<p><b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i>            Season: Breeding</p>	Bird of conservation concern
<p><b>Wood Thrush</b> <i>Hylocichla mustelina</i>            Season: Breeding</p>	Bird of conservation concern

## Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

## Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

### DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

## APPENDIX B-5.

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### Suitable Habitat Assessment Form - NLEB



If the answer is yes to any of the above questions, the determination is that "Suitable Bat Habitat" exists within the Cutting Area.

Determination:



Suitable Bat Habitat



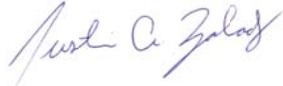
No Suitable Bat Habitat

**Characterization/Description of the Habitat:** The January 2015 site visit revealed fewer than 10 trees that meet the criteria to act as suitable roost trees for the northern long-eared bat. These included several sugar maples with hollow cavities in dead limbs and several declining or damaged white ash trees with cracks, crevices, and/or exfoliating bark.

**Comments (include specific bat species, if applicable, such as no Indiana bats if project elevation is over 900 ft NGVD, or roost trees for northern long-eared bat specifically were noted by NYNHP):** The presence of suitable northern long-eared bat habitat has been verified at and near the project site. The effects to the bats resulting from the tree removal can be minimized by adhering to the cutting window occurring between October 31 and March 31.

**Name (individual completing the field assessment):** Justin A. Zoladz (Recovery Permit #TE212427-6)\_

**Signature:**



**Date:** 07-09-2015

## APPENDIX B-6.

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Visual Impact Assessment April 2015

# VISUAL IMPACT ASSESSMENT

for

New York State Department of Transportation  
Bridge Project  
P.I.N. 5760.40

BINs 5522000 and 5522010

## American Falls Bridges

Niagara Falls State Park  
Niagara County  
City of Niagara Falls

*Prepared by:*

**GPI**

Greenman-Pedersen, Inc.



April 2015

# VISUAL IMPACT ASSESSMENT

## INTRODUCTION

### Methodology

A highway or bridge improvement project can often create a new visual experience for motorists using the facility and those living, working, walking, or traveling nearby. In order to meaningfully assess the highway project's visual impacts, the features that comprise the visual landscape and the values that viewers place on them must be considered. Visual impacts from a project result from changes in the visual landscape and the viewers' response to those changes.

The methodology for this Visual Impact Assessment for the rehabilitation or replacement of the American Falls Bridges project generally follows the format described in Visual Impact Assessment of Highway Projects (US Department of Transportation, Federal Highway Administration Office of Environmental Policy, March 1981). The use of this methodology conforms to the New York State Department of Transportation's (NYSDOT) Visual Assessment Policy per Engineering Instruction EI 02-025 and EB 03-052. Following is an outline of the methodology as applied to this project.

1. Identify Project Viewshed
2. Identify Visual Districts
3. Assess Existing Visual Environment
  - Describe Visual Character
  - Rank Visual Quality
4. Identify Viewer Groups
  - Rank Viewer Exposure and Sensitivity
5. Assess Visual Impact for No-build and Project Options
  - Document Change to Visual Resource
    - Identify Key Viewpoints
    - Photograph Existing Conditions
    - Prepare Simulations of Proposed Conditions
  - Evaluate Change to Character and Quality of Visual Resource
  - Predict Viewer Response
  - Describe and Rate Resultant Impact on Visual Resource
6. Identify Strategy and/or Techniques to Avoid, Minimize, or Mitigate Impacts

The first step was to identify the project **viewshed**. The viewshed can be described as the area that can be seen from the project and the area around the project from which the project can be seen. It is the physical boundary of the project's visual environment. It can be established based on topographic mapping, sight-line projections, and field investigations.

After the viewshed was established, the project area was reviewed to determine what **visual districts** (i.e., areas with distinct visual characteristics such as landform, vegetation, and degree/ type of development) existed. Separate visual districts are often identified on highway or bridge projects because, being long linear facilities, they typically occur in more than one area meeting the description of a distinct district. The visual impacts of the project may vary in significance from one distinct area to another. In the case of the American Falls Bridges project, there is only one district. The project limit is contained at the existing crossing of the American rapids between the mainland and Green Island and Green Island and Goat Island. The project is entirely within Niagara Falls State Park.

Having established that the project occurs within one visual district, the existing visual environment of the district was reviewed. The visual features or resources within a district define the visual environment of that district. The review of the visual environment was conducted during a site visit to document the **visual character** and **visual quality** of the project district.

The **visual character** of an area is created by the visual patterns of which it consists. The elements of the visual patterns are the form, line, color, and texture of the landscape area components, and how they relate in terms of dominance, scale, diversity and continuity. The **visual quality** of an area is an evaluative judgment of the view or a series of views. The appraisal of quality is a subjective process and several approaches can be used to establish the degree of view quality. For this study an evaluation of three key visual criteria was made. The view criteria assessed were *vividness* (the power or memorable nature of the view), *intactness* (the completeness or integrity of the landscape elements in the view, and the lack of unrelated elements encroaching on the view), and *unity* (the cohesion and harmony presented by the view's composition). Based on ranking each of these criteria as high, medium, or low, a relative degree of overall visual quality for a view or district was determined. The visual character and quality of a district are typically illustrated with photographs of existing conditions.

The next step in the process was to identify the viewers that will potentially be impacted by project changes to the visual environment. Viewers are then categorized into groups to assess how the visual environment is seen and what values are placed on the views. Viewer exposure and sensitivity determine the anticipated response of each group to proposed changes in the visual environment.

The baseline condition is assessed to establish the visual condition against which visual change/or impacts will be measured. Evaluating the area assuming a future No-Build option typically does this. The visual condition of this option is assessed in the same manner as the existing condition.

Once the No-Build condition has been defined, the changes to the visual environment resulting from the proposed project options are described and documented. The main method of documenting the visual changes is by preparing photo simulations of key viewpoints within the project viewshed. The simulations are compared with the existing

views from the same locations. The physical changes to character and quality are described and rated. The viewers' responses to the changes are then predicted and analyzed considering their exposure and sensitivity. This helps determine the positive and negative visual impacts of each option.

In order to present the magnitude of visual impacts and to compare options, relative ratings are assigned to each visual impact. The ratings range from low to high and are described as follows:

Low Visual Impact -Describes a slight change to visual resources with no change to significant visual resources or a key view. New visual elements are generally compatible with future No-Build views. Little or no response to change in visual resources is expected.

Moderate Visual Impact -Describes a slight change in visual resources resulting in a high level of viewer response, or an extensive change in visual resources resulting in little viewer response. New visual elements are somewhat incompatible with future No-Build views.

High Visual Impact -Describes an extensive change to visual resources, or change to a significant visual resource or key view. New views or new visual elements are not compatible with future No-Build views. A high level of viewer response to the change in visual resources can be expected.

After the visual impacts are assessed, based on these criteria, project options are compared.

## EXISTING VISUAL CONDITIONS

### Project Viewshed

For this project the viewshed was determined by reviewing existing aerial photography and field investigations. The limit of the project's viewshed occurs mainly as the result of vegetation and manmade structures that limit and control the views to and from the project area. The topography in the area above the rapids and falls is variable and also plays a part in defining the limits of the project viewshed. Figure VIA-1 depicts the viewshed limits for the American Falls Bridges project.



**Figure VIA-1  
Viewshed Map**

NORTH



## **Visual Districts**

The project is located within Niagara Falls State Park. The Falls are world-renowned, are a geologic wonder, and the site is on the National and State of New York Historic Registers. The proposed project is to rehabilitate or replace the American Falls Bridges that currently provide access from the American mainland to and through Green Island, and then to Goat Island where the park provides areas to view the American Falls and the Canadian (Horseshoe) Falls. Unlike many highway projects, that may pass through several visual districts, the American Falls Bridges project occurs in one visual district with a consistent visual character and quality. The entire project is contained within the park. The park, formerly the State Reservation at Niagara, was studied and described in an 1887 report by Fredrick Law Olmsted and Calvert Vaux. Olmsted is seen by many as part of the historic recognition of Niagara Falls State Park. The mainland area of the park and the Goat Island area contain various passive recreational facilities in addition to the major falls viewing areas. These include trails, shoreline promenades and overlooks, and multi-use lawn areas. The landscape elements of the park define the area as a visual district. The landscape of the park is characterized by the curvilinear alignment of the paths, drives, and trails, the variable rolling topography of the passive use areas in contrast with the steep and rugged slopes adjacent to the shore and rapids, and the diverse mix of planted trees and shrubs that blend with riverside natural areas.

**Visual Character.** The existing visual resources within Niagara Falls State Park are dominated by the phenomenal natural features of Niagara Falls and the rapids section of the river as it approaches the falls. These dynamic visual resources are complemented and supported by the natural and built park landscape that exists on the mainland, Green, and Goat Island. The park trails and roadways allow visitors to access a variety of views, so visual diversity is part of the character established within the project viewshed. Some views are long and wide with dynamic attributes, such as views of the rapids or falls. These may have a distant background, while other views, perhaps of a quiet lawn or sitting area are shorter and contained.

**Visual Quality.** As stated above, establishing the visual quality of a viewshed or project site is evaluative yet subjective. There are several approaches that can be used to document visual quality, these include: checking official designation of a place as scenic and/or historic, surveying viewer preference, comparison of the project site qualities for their representation of the regional geography, or the evaluation of the site's visual qualities of vividness, intactness, and unity. While the latter approach was used for this project's visual impact assessment, any of these evaluative approaches would yield a high visual quality for the American Falls Bridges project viewshed.

Vividness is best demonstrated by the falls and the rapids. They are very memorable and powerful visual elements. The degree of intactness of the majority of the views available within the project area is high. This results from the strong integrity of the natural and built landscape elements within the vistas that exist throughout the viewshed. There is

little encroachment into views by elements that would be perceived as negative. Unity of views within the viewshed is also high. As a viewer observes the environment within the viewshed each vista presents compositional harmony and connectivity. As an example, a view across the river displays the rapids as the vivid focal point in the mid-ground that is framed by foreground vegetation and supported by the vegetation and sky in the background. Often the existing bridges provide an element that visually frames the view and connects the foreground to the middle and background. Figures VIA-2 to VIA-4 demonstrate the character and high degree of visual quality that exists throughout the park in general and specifically within the project viewshed.



**Figure VIA-2**

American Falls, from Goat Island above and from the mainland below. These views demonstrate the dynamic character and vivid quality of the visual resources available within the park.



**Figure VIA-3**  
Pedestrian walks, overlooks, and open spaces offer views of diverse character and length. All of these views display strong intactness and unity.



**Figure VIA-4**

In contrast to the many dynamic views of the falls and the rapids along the project route, there are also views of a serene character available to the pedestrian tourist.

## **Viewer Groups**

The viewer groups that may typically be influenced by the visual changes associated with the project include tourists, both motorists and pedestrians using walkways within the viewshed, and employees working at the park and attractions within the park. Shoppers and patrons of the area businesses, that are often identified as a separate viewer group, are included as part of the tourist viewer group. For this project the resident viewer group is limited. The entire project viewshed is contained within the park so there are no residents with a direct view of any visual changes associated with the project. Residents living adjacent to or near the project viewshed would only experience the potential visual changes when they were within the project viewshed as visitors or workers and therefore are included within those viewer groups. Each viewer group typically will have a different degree of sensitivity to potential changes to the visual environment.

**Viewer Exposure and Sensitivity.** Based on experience with similar transportation improvement projects, and because the park is a unique and famous attraction, the most sensitive viewer group was identified as the tourists that dominate the use of the project area during the summer season. The tourist viewer group consists of motorist and pedestrian sub-groups. Motorists would include those driving in their own vehicles and those riding on tour busses and trolleys that service the park. Because of the national and international significance and attraction of the park and its natural features, the tourist viewer group is the largest. The tourist user group has the greatest exposure to the park's visual resources, and also has the most sensitivity to potential visual impacts that may be caused by the project. The tourist user group is the most sensitive because of the expectations they have for the power, drama, memorable nature, and quality of the visual scenes presented throughout the park. The pedestrian tourist sub-group will have a longer and more direct exposure, as walkers in close proximity to the project elements, than will the tourist motorist sub-group that will view the project from vehicles passing by.

The worker/resident viewer group will be most aware of potential visual changes due to their likely knowledge of the existing and historical visual character and quality. They also are likely to adapt to possible changes because they will develop a familiarity with the new visual conditions. Table VIA-1 summarizes the evaluation of viewer sensitivity using a numerical scale.

Viewer Group	Exposure 1(least) to 5 (most)	Projected Degree of Sensitivity 1 to 5	Resultant Impact Response (Additive)
Tourist/Pedestrian	5	5	10
Tourist/Motorist	4	4	8
Worker/Resident	3	4	8

**Table VIA-1  
Viewer Group Sensitivity**

**Visual Impact Assessment**

A four-step process was employed to assess the impacts to the visual environment within the project viewshed. Photographing the existing scene at key viewpoints and preparing photo simulations of the proposed conditions documented the changes to the visual resources created by implementing the project options. The changes to the visual character and quality of a view were then evaluated by reviewing the simulations. Viewer response was then predicted based on their exposure and sensitivity. After considering the change to character, quality, and predicted viewer response, the resultant positive or negative impact was ranked low, moderate, or high.

**Key Viewpoints**

Key viewpoint locations were selected within the project viewshed (one visual district was identified) that represent the existing character and quality of visual resources that have the potential to be impacted or changed by the proposed project options. Table VIA-2 lists the viewpoint locations and Figure VIA-5 illustrates the viewpoint locations.

Location No	Location Description
1	East Riverside Walkway
2	Northwest Riverside Overlook Walkway
3	Southwest Riverside Overlook
4	American Rapids Bridge
5	Goat Island on-route view north toward Green Island
6	From mainland stair view south toward Green Island
7A	On mainland to Green span view north toward mainland
7B	On Green Island on-route view south toward Goat Island
8	From Canadian promenade view east toward American falls

**Table VIA-2  
Viewpoint Descriptions**



**Figure VIA-5  
Viewpoint Location Map**

## **Evaluation of Impacts**

This section of this assessment contains the review and evaluation of the potential changes to the visual environment within the viewshed of the American Fall Bridges project. It is organized by viewpoint, and by design option as depicted in each simulation. The change to visual character and quality is discussed, the viewer response to the change(s) is predicted, and the resultant impact is ranked as low, moderate, or high.

The Replacement Option includes several optional types of bridges, and for the purposes of this assessment these are categorized and defined as Option A and Option B. Option A includes all bridge types categorized as traditional concrete arches and Option B is the steel bridge type.

### **Viewpoint No. 1: Existing Conditions/No-Build Option**



Viewpoint No. 1 is located on the northerly bank of the Niagara River. The view is westerly toward the mainland to Green Island section of the rapids. The foreground is dominated by the rapids section that provides a dynamic character and quality to this view. The existing bridge limits the distance of the view to a mid-distant length and is the focal point of the view. The bridge provides intactness and a unity to the view, but reduces the panoramic quality of the background vegetation. The froth of the rapids is very reflective, and makes the foreground somewhat harsh. The temporary (Mabey) bridge that sits on top of the concrete steel bridge is visible, but at this distance appears similar to a railing, and is not a highly negative feature. This view as an existing or no-build condition presents distinct character, and is of a high quality.

## Viewpoint No. 1: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the existing bridge. All view characteristics and qualities described for the existing/no-build option are maintained. Dimensionally the bridge is wider than the original, and the profile of the arches is slightly higher. Balconies were added at the pier locations to provide an overlook platform for pedestrians to have closer views of the rapids. The line, form, texture and mass of the bridge are almost identical to the current bridge from this viewpoint. With the Mabey bridge removed the background vegetation is somewhat more prominent which increases the unity of the view.

### Predicted Viewer Response

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the walkway. The completed option does not present significant changes to the scene. Viewer response predicted for this option is low negative to high positive, due to recognition of correcting a failing facility.

### Resultant Impact Rating

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are slight. The option closely emulates the style and characteristics of the existing, and is improved with the removal of the Mabey bridge.

## Viewpoint No. 1: Option B1 - Steel Tied-Arch Bridge



Option B1 is a steel tied-arch bridge. It is significantly visually different from the current concrete steel bridge. The superstructure is higher and therefore is contained in the upper middle ground and in front of background vegetation that the current bridge and Option A are below. However the bridge is lighter in mass, and the line, form, and texture present and airy and elegant sense. There are only two spans and one pier visible, and the deck is thin which allows the rapids to be more visible under the bridge. While the superstructure arches are contained in the mid ground and in front of the background vegetation, their light mass creates a transparent quality at this distance. At times while focusing on the bridge, it seems to blend in with the background and almost disappears. This allows the background vegetation to become more prominent and strengthens its unifying and framing effect of the vista.

### Predicted Viewer Response

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the walkway. The completed option displays significant changes to the scene. As described above the changes do not harm the scene but do change it. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be moderate to high negative.

### Resultant Impact Rating

The resultant impact rating for Option B1 at this viewpoint is one of **moderate** visual impact. While changes to the scene are significant they are not necessarily negative. The light weight character of this option actually allows natural features to become stronger elements within the view. However, the changes will likely result in a high negative viewer response.

## **Viewpoint No. 1: Option B2 – Steel Girder Bridge**



Option B2 is a steel girder structure. It is visually significantly different from the current stone arch bridge. The bridge superstructure and structural elements are narrow and very linear and streamlined. They yield a modern highway character that is a departure from the historic period of the existing structure. However the structure is lighter in mass, and the line form and texture. The thinner deck structure and longer spans allow more of the rapids to become part of the view which increases the dynamic and vivid nature of the view. The lighter mass of the superstructure creates a transparent quality at this distance. At times while focusing on the structure it seems to blend in with the background. This allows the background vegetation to become more prominent and strengthens its unifying effect and tends to absorb some of the industrial character of the bridge.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the walkway. The completed option displays significant changes to the scene. As described above the changes do not harm the scene but does change it. There is no historic precedent for this type of structure. While the narrow profile increases the prominence of the natural features in the scene, the highway and industrial qualities of this design would likely not be considered compatible with the historic park environment. Viewer response predicted for this option is likely to be moderate to high negative.

### **Resultant Impact Rating**

The resultant impact rating for Option B2 at this viewpoint is one of **moderate** visual impact. While changes to the scene are significant they are not necessarily negative. The light weight character of this option actually allows natural features to become stronger elements within the view. However, the changes will likely result in a high negative viewer response due to the highway/industrial style.

## Viewpoint No. 2: Existing Conditions/No-Build Option



Viewpoint No. 2 is located on the promenade walk recently reconstructed along the northerly bank of the Niagara River. The view is southwesterly toward Green Island. The foreground to mid-ground is dominated by the rapids that provides a dynamic character and quality to this view. The existing bridge frames the left side of the view and is the focal point of the view. The view is terminated by the bridge and the vegetation on Green Island. The view is a relatively short distance. The bridge and Green Island vegetation provide intactness and unity to the view. The rapids here are not as turbulent as in other sections, and therefore the reflectivity is medium, and maintains a pleasing coloration and brightness level. The temporary (Mabey) bridge that sits on top of the concrete steel bridge is visible and lends an incompatible industrial quality to the bridge that is a negative in this view. This view as an existing or no-build condition presents distinct vivid character and is of a high quality.

## Viewpoint No.2: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the existing bridge. All view characteristics and qualities described for the existing/no-build option are maintained. Dimensionally the bridge is wider than the original and the profile of the arches is slightly higher. At this close distance these changes are evident and the bridge is more prominent as it extends toward the foreground. Also, at this distance, the Balconies that were added at the pier locations to provide an overlook platform for pedestrians are recognized as key architectural features of the bridge. They are more than textural elements and increase the mass and anchoring effect of the bridge in this view. While these changes to the bridge are evident they do not significantly alter the character and quality of the view. While the mass appears greater the line, form, and texture of the proposed bridge remain compatible with the current structure from this viewpoint. With the Mabey bridge removed the negative industrial feeling is gone and replaced with the originally intended arch bridge.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the riverside promenade. The completed option does not present significant changes to the scene. Viewer response predicted for this option is low negative to high positive due to recognition of correcting a failing facility.

**Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are slight. The option closely emulates the style and characteristics of the existing, and is improved with the removal of the Mabey bridge.

## Viewpoint No. 2: Option B1 - Steel Tied-Arch Bridge



Option B1, the steel tied-arch bridge is significantly different visually from the current concrete steel bridge especially from this low and short distance view. The superstructure is higher, and the underside of the deck structure is obvious and changes the character and quality of the view. The bridge appears more complex and somewhat less connected and unifying. However the thinner deck structure and longer spans allow the more turbulent upstream rapids to become part of the view, which increases the dynamic and vivid nature of the view, and brightens it as well. Because of the change in material the form line and texture appear very different. From this vantage point it presents a more functional and industrial appearance.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the riverside promenade. The completed option displays significant changes to the scene. As described above largely because of the proximity and low position of the viewpoint the changes alter the character and quality of the view. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be highly negative.

**Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. Changes to the scene are significant that alter the character and quality of the view. The light weight character of this option is not evident from this low or inferior viewpoint position. The changes will likely result in a high negative viewer response.

## Viewpoint No. 2: Option B2 – Steel Girder Bridge



Option B2, the steel girder structure is significantly different visually from the current stone arch bridge. The bridge elements are very linear and streamlined that yields a modern character that is a departure from the historic period of the existing structure. The underside of the deck structure is obvious and changes the character and quality of the view. The bridge post and beam structure is more simple and seems to dominate the view in contrast to the more graceful arches of the existing bridge that appears more organic and blends with the terrain. However the thinner deck structure and longer spans allow the more turbulent upstream rapids to become part of the view which increases the dynamic and vivid nature of the view and brightens it as well. Because of the change in material and shape, the form line and texture appear very different. From this vantage point it presents a more functional and industrial appearance.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the riverside promenade. The completed option displays significant changes to the scene. As described above largely because of the proximity and low position of the viewpoint the changes alter the character and quality of the view. There is no historic precedent for this type of structure. Viewer response predicted for this option is likely to be highly negative.

**Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **high** visual impact. Changes to the scene are significant that alter the character and quality of the view. The industrial character of this option is evident from this low or inferior viewpoint position. The changes will likely result in a high negative viewer response.

### Viewpoint No. 3: Existing Conditions/No-Build Option



Viewpoint No. 3 is located at a riverside pedestrian overlook on the southerly bank of the American Channel of the Niagara River, on Goat Island. The view is southeastly and upstream along the channel that runs between Green Island and Goat Island. The view is narrow and more intimate than the many powerful views available throughout the park. The existing bridge is the focal point of the view though the degree of the span that is visible is small relative to the natural features of the river and vegetation. The composition of this view is very well balanced between the water, fore- and mid-ground vegetation, the bridge and sky component. The bridge appears to step across the river from one island to the other. The view is very intact, the building in the background being the only encroachment, classically balanced between water, vegetation, and sky. It is of high quality and is unique in that the viewer can attain a “mid-stream view” without being in a watercraft.

### Viewpoint No.3: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the existing bridge. All view characteristics and qualities described for the existing/no-build option are maintained. Dimensionally the bridge is wider than the original and the profile of the arches is slightly higher. From this focused viewpoint those changes are not perceptible and have no impact on the view. The balconies that were added at the pier locations to provide an overlook platform for pedestrians are not visible from this vantage and do not change the character or quality of the view. The line, form, texture and mass of the bridge are almost identical to the current structure from this viewpoint. The removal of the Mabey bridge improves the natural character of the scene slightly.

#### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the riverside walkways and overlooks on the northerly side of Goat Island. The completed option does not present significant changes to the scene. Viewer response predicted for this option is low negative or neutral to high positive due to recognition of correcting a failing facility.

#### **Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are slight. The option closely emulates the style and characteristics of the existing and is improved with the removal of the Mabey bridge.

### Viewpoint No. 3: Option B1 - Steel Tied-Arch Bridge



Option B1 is a steel tied-arch bridge. Visually it is significantly different from the current concrete steel bridge. The superstructure is higher and therefore is contained in the upper background. However the bridge is lighter in mass, and the line form and texture present an airy and elegant character. Within this narrow focused view the form and mass of the structure are almost completely absorbed by the mid and background vegetation and almost becomes invisible. The thin deck allows the rapids to be more visible as they pass under the bridge. This option allows the natural elements of the view to become more unified.

#### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the riverside walkways and overlooks on the northerly side of Goat Island. While the completed option is physically very different from the existing bridge, the changes to the scene are not significant and in some ways improved as the natural features seem to gain prominence. As described above the changes do not harm the scene but do change it slightly. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. In spite of the tendency to view a change in view character as negative, viewer response predicted for this option, at this viewpoint, is likely to be neutral to moderately positive. This is due to the transparent quality of this option from this viewpoint location.

**Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **low** visual impact. Changes to the scene are different but not significant and are not negative. The light weight character of this option actually allows natural features to become stronger elements within the view. The changes will likely result in a neutral to low viewer response.

### Viewpoint No. 3: Option B2 – Steel Girder Bridge



Option B2 is a steel girder structure. Visually it is significantly different from the current stone arch bridge. The superstructure is very narrow compared to the existing structure and therefore appears lighter in mass. The line form and texture and the location of the structural elements within the view make tend to camouflage the bridge. It is almost completely absorbed by the mid and background vegetation and almost becomes invisible. The thin deck allows the rapids to be more visible as they pass under the bridge. This option allows the natural elements of the view to become more unified.

#### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian, and to some extent worker/resident pedestrians that may be using the riverside walkways and overlooks on the north side of Goat Island. While the completed option is physically very different from the existing bridge, the changes to the scene are not significant and in some ways improved as the natural features seem to gain prominence. As described above the changes do not harm the scene but does change it slightly. There is no historic precedent for this type of structure. In spite of the tendency to view a change in view character as negative, viewer response predicted for this option, at this viewpoint, is likely to be neutral to moderately positive. This is due to the transparent quality of this option from this viewpoint location.

**Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **low** visual impact. Changes to the scene are different but not significant and are not negative. The light weight character of this option actually allows natural features to become stronger elements within the view. The changes will likely result in a neutral to low viewer response.

#### **Viewpoint No. 4: Existing Conditions/No-Build Option**



Viewpoint No. 4 is located on the westerly sidewalk of the American Rapids Bridge. The view is westerly toward the mainland to Green Island section of the American Channel. The foreground is dominated by turbulent rapids that provide a dynamic character and quality to this view. The view of the scene and the bridge is from a superior position, meaning the viewpoint is higher than the focal point. This adds to the drama of the view experience. This view will be available to pedestrians on the sidewalk as well as motorists in cars, trolleys, or busses. The existing bridge is a focal point feature that is significant in the view but does not limit the view. The view is distant in length. The bridge provides intactness and unity to the view. The froth of the rapids on the right is very reflective. The left side is less turbulent and less reflective creating an overall balance of brightness and coloration. The temporary (Mabey) bridge that sits on top of the concrete steel bridge is visible and at this angle is somewhat of a negative impact in spite of the distant view. This view as an existing or no-build condition presents distinct character that is of a high quality. It represents one of many memorable views throughout the park.

#### Viewpoint No.4: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the existing bridge. All view characteristics and qualities described for the existing/no-build option are maintained. Dimensionally the bridge is wider than the original and the profile of the arches is slightly higher. Balconies were added at the pier locations to provide an overlook platform for pedestrians to have closer views of the rapids. The line, form, texture and mass of the bridge are almost identical to the current bridge from this viewpoint. With the Mabey bridge removed the background vegetation is somewhat more prominent, which increases the unity of the view. An additional area of the river will likely be visible beyond the bridge which improves the balance of the view composition.

#### **Predicted Viewer Response**

All identified viewer groups are affected by the changes at this viewpoint. Pedestrian and motorist tourists and worker/residents that may be using the sidewalk or roadway on the American Rapids Bridge will be subject to this view. The completed option does not present significant changes to the scene. Viewer response predicted for this option is low negative to high positive due to recognition of correcting a failing facility.

#### **Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are slight. The option closely emulates the style and characteristics of the existing, and is improved with the removal of the Mabey bridge. Little or no viewer response is expected.

#### **Viewpoint No. 4: Option B1 - Steel Tied-Arch Bridge**



Option B1 is a steel tied-arch bridge. Visually it is significantly different from the current concrete steel bridge. The superstructure is higher and therefore is contained in the upper middle ground and in front of background vegetation that the current bridge and Option A are below. However the structure is lighter in mass, and the line form and texture present an airy and elegant sense. There are only two spans and one pier visible, and the deck is thin, which allows the rapids to be more visible as they pass under the bridge. While the superstructure arches are contained in the mid ground and in front of the background vegetation, their light mass creates a transparent quality at this distance. From the superior location of this viewpoint, one is able to see through the arches to the vegetation and a portion of the river in the background. Though the character of this option is very different in texture line and form from the current condition, it remains a focal point and unifying element of the view.

#### **Predicted Viewer Response**

All identified viewer groups are affected by the changes at this viewpoint. Pedestrian and motorist tourists and worker/residents that may be using the sidewalk or roadway on the American Rapids Bridge will be subject to this view. The completed option displays significant changes to the scene. As described above the changes do not harm the scene but do change it. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be moderate to high negative.

**Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. While changes to the scene are significant they are not necessarily negative. The light weight character of this option actually allows natural features to become stronger elements within the view. However, the changes will likely result in a high negative viewer response.

#### **Viewpoint No. 4: Option B2 – Steel Girder Bridge**



Option No. B2 is a steel girder structure. Visually it is significantly different from the current stone arch bridge. The bridge superstructure and structural elements are narrow and very linear and streamlined. They yield a modern highway character that is a departure from the historic period of the existing structure. However the structure is lighter in mass, and the line form and texture. The thinner deck structure and longer spans allow more of the rapids to become part of the view which increases the dynamic and vivid nature of the view. Because of the change in material and shape, the form line and texture appear very different. From this vantage point it presents a more functional and industrial appearance. From the superior location of this viewpoint one is able to see under the girders to the portions of the river in the background. Though the character of this option is very different in texture line and form from the current condition it remains a focal point and unifying element of the view.

#### **Predicted Viewer Response**

All identified viewer groups are affected by the changes at this viewpoint. Pedestrian and motorist tourists and worker/residents that may be using the sidewalk or roadway on the American Rapids Bridge will be subject to this view. The completed option displays significant changes to the scene. As described above the changes do not harm the scene but does change it. There is no historic precedent for this type of structure. Viewer response predicted for this option is likely to be moderate to high negative.

**Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **high** visual impact. While changes to the scene are significant they are not necessarily negative. The light weight character of this option actually allows natural features to become stronger elements within the view. However, the changes will likely result in a high negative viewer response.

## Viewpoint No. 5: Existing Conditions/No-Build Option



Viewpoint No. 5 is located at the entry area/plaza on Goat Island. The view is to the east on the bridge alignment route toward Green Island. The view is narrow and focused and is framed by vegetation. The view is relatively short in distance as the background vegetation terminates the view immediately behind the mid-ground. The bridge is the focal point of the view; however the only component visible is the temporary (Mabey) bridge which sits on top of the concrete steel bridge, masking it totally. The form and textures of the Mabey bridge are very industrial in nature and not compatible with the park setting. As an existing or no-build condition this view is of low to medium quality. The traffic control barriers are incidental and very temporary to protect visitors from the pavement sealing underway. These features were not considered in establishing the character and quality of this view.

### Viewpoint No.5: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the current bridge that exists below the Mabey bridge in the existing conditions/no-build view. The form line and textures of this option are very similar to the current bridge. The proposed bridge is somewhat wider than the existing structure and occupies more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park.

#### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing concrete steel bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention of current view quality.

**Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the current concrete steel bridge, and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

### Viewpoint No. 5: Option B1 - Steel Tied-Arch Bridge



Option B1 is the steel tied-arch bridge. In this short distance view the elegant form of the arch is not evident. The arches, ties, and the railing that protects the ties add elements and mass to the scene that divides the view into “corridors”. The view becomes narrower than the current view. The arches and ties also interrupt the view of the framing vegetation. At this close distance the arches, ties, and roadside guiderail, suggest an industrial character, similar to the current Mabey bridge, that is not consistent with the form and materials used for many of the built features in the park.

#### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option displays significant changes to the scene. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be high negative.

#### **Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. Changes to the scene are significant. At the distance of this viewpoint the light weight character of this option is not evident. The changes will likely result in a high negative viewer response.

### Viewpoint No.5: Option B2 – Steel Girder Bridge



Option B2 is the steel girder structure. From this viewpoint the substructure is not visible. The superstructure is almost identical to option A, which closely emulates the current bridge that exists below the Mabey bridge in the existing conditions/no build view. The form line and textures of this option, in this view are very similar to the current bridge. The proposed bridge is somewhat wider than the existing structure and occupies more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park.

#### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing stone bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention of current view quality.

**Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the current stone bridge and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

## Viewpoint No. 6: Existing Conditions/No-Build Option



Viewpoint No. 6 is located on the top of the promenade stairway above the northerly bank of the Niagara River. The view is westerly along the bridge alignment for the mainland to Green Island bridge. The viewpoint is above or superior to the bridge location. The foreground vegetation frames the view and focuses it to the mid center along the bridge alignment. The bridge is the focal point of the view; however the only structure visible is the temporary (Mabey) bridge, which sits on top of the concrete steel bridge, masking it totally. The form and textures of the Mabey bridge are very industrial in nature and not compatible with the park setting. While the line form and texture of the existing materials are out of character and lend a negative quality to the scene, the view is unified, intact, and compositionally balanced between the built forms and the vegetation. The view is of medium distance, terminated by the background vegetation. As an existing or no-build condition this view is of medium quality. The traffic control and construction area barriers are incidental and very temporary to protect visitors from the riverbank promenade construction underway. These features were not considered in establishing the character and quality of this view.

## Viewpoint No.6: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the current bridge that exists below the Mabey bridge in the existing conditions/no-build view. The form line and textures of this option emulate the concrete steel bridge. The proposed bridge is somewhat wider than the existing bridge and occupies slightly more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park. The view remains intact and unified. The removal of the metal Mabey bridge expands the mid-ground and further balances the view and the ability to observe park visitor activity.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing concrete steel bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention of current view quality.

**Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the current concrete steel bridge, and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

## Viewpoint No. 6: Option B1 - Steel Tied-Arch Bridge



Option B1 is the steel tied-arch bridge. In this mid distance view the elegant form of the arches is somewhat evident. The arches, ties, and the railing that protects the ties add elements and mass to the scene that divides the view into “corridors”. The view becomes narrower than the current view. The arches and ties also interrupt the view of the mid and background vegetation. At this middle distance the arches, ties, and roadside guide rail, present a character that is very different from the form line and texture of the materials used on the current bridges and for many of the built features in the park.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option displays significant changes to the scene. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be moderate to high negative due to the very different character of the structure.

### **Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. Changes to the scene are significant. At the distance of this viewpoint the light weight character of this option is partially evident. The changes will likely result in a high negative viewer response.

## Viewpoint No.6: Option B2 – Steel Girder Bridge



Option B2 is the steel girder structure. From this viewpoint the substructure is not visible. The superstructure is almost identical to option A which closely emulates the current bridge that exists below the Mabey bridge in the existing conditions/no build view. The form line and textures of this option, in this view are very similar to the current bridge. The proposed bridge is somewhat wider than the existing structure and occupies more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing stone bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention of current view quality.

**Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the current stone bridge and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

### Viewpoint No. 7A: Existing Conditions/No-Build Option



Viewpoint 7A is located on the mainland to Green Island bridge. The view is northerly toward the mainland and is similar to that of a pedestrian on the span. The view is somewhat short in length, has a strong central focus, and is balanced and unified. However the height of the viewpoint is artificially high as it is located on the deck of the temporary (Mabey) bridge which sits on top of the current concrete steel bridge, masking it totally. The form and textures of the Mabey structure are very industrial in nature and not compatible with the park setting. These features dominate the fore- and mid-ground. Their temporary nature creates an uncomfortable character. As an existing or no-build condition this view is of low quality mainly due to the incompatible character of the Mabey bridge.

## Viewpoint No.7A: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge similar to the current bridge that exists below the Mabey bridge in the existing conditions/no-build view. The form line and textures of this option emulate the concrete steel bridge. The proposed bridge is somewhat wider than the existing bridge and occupies slightly more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park. The view remains strongly focused, intact and unified. The removal of the metal Mabey bridge lowers the viewpoint and reveals more background vegetation and the stairway to the upper northern promenade.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing concrete steel bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention and improvement of current view quality.

**Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the concrete steel bridge and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

## Viewpoint No. 7A: Option B1 - Steel Tied-Arch Bridge



Option B1 is the steel tied-arch bridge. In this relatively short distance view the elegant form of the arches is only somewhat evident. The arches, ties, and the railing that protects the ties add elements and mass to the scene that divides the view into “corridors”. The main view becomes narrower than the current view. The arches and ties also interrupt the view of the mid and background vegetation. The view remains strongly focused and intact but there is less balance between the fore- and mid-ground components and the vegetation in the view. The lower viewpoint position created by removing the Mabey bridge allows the promenade stairway to be part of the background. At this distance the arches, ties, and roadside guide rail, present a character that is very different from the form line and texture of the materials used on the current bridges and for many of the built features in the park.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option displays significant changes to the scene. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be high negative.

**Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. Changes to the scene are significant. At the distance of this viewpoint the light weight character of this option is not evident. The changes will likely result in a high negative viewer response.

## Viewpoint No.7A: Option B2 – Steel Girder Bridge



Option B2 is a steel girder structure. From this viewpoint the substructure is not visible. The superstructure is almost identical to option A, similar to the current bridge that exists below the Mabey bridge in the existing conditions/no build view. The form line and textures of this option emulate the current stone bridge. The proposed bridge is somewhat wider than the existing structure and occupies slightly more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park. The view remains strongly focused, intact and unified. The removal of the metal Mabey structure lowers the viewpoint and reveals more background vegetation and the stairway to the upper northern promenade.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing stone bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention and improvement of current view quality.

**Resultant Impact Rating**

The resultant impact rating for optionB2 at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. From this viewpoint the option closely emulates the style and characteristics of the current stone bridge and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

## Viewpoint No. 7B: Existing Conditions/No-Build Option



Viewpoint No. 7B is located on the Green Island roadway that leads to the Green to Goat Island bridge. The view is southerly toward Goat Island and is at the elevation of a pedestrian on route to Goat Island. The view is of medium distance, terminated by the background vegetation and sloped lawn area on Goat Island. The mid-ground vegetation frames the view and focuses it to the background center along the bridge alignment. The bridge is the prominent feature in the mid-ground of the view; however the only component visible is the temporary (Mabey) bridge which sits on top of the current concrete steel bridge masking it totally. The form and textures of the Mabey structure are very industrial in nature and not compatible with the park setting. While the line, form, and texture of the existing materials are out of character and lend a negative quality to the scene, the view is unified, intact, and compositionally balanced between the built forms and the vegetation. As an existing or no-build condition this view is of medium quality. The traffic control and construction area barriers are incidental and very temporary to protect visitors from the deck repairs underway. These features were not considered in establishing the character and quality of this view.

## Viewpoint No.7B: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge similar to the current bridge that exists below the Mabey bridge in the existing conditions/no-build view. The form, line, and textures of this option emulate the current concrete steel bridge. The proposed bridge is somewhat wider than the existing bridge and occupies slightly more of the view. However it remains framed by and in balance with the existing vegetation. The form, line, and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park. The view remains strongly focused, intact, and unified. The removal of the metal Mabey structure lowers the viewpoint and reveals more background vegetation and provides a slightly wider view of the sloped lawn area on Goat Island at the background plane of the view.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing concrete steel bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention and improvement of current view quality.

**Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the current concrete steel bridge and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

## Viewpoint No. 7B: Option B1 - Steel Tied-Arch Bridge



Option B1 is the steel tied-arch bridge. This option seems to change the view from mid-distant to a short distance view length. As such, the elegant form of the arches is not evident. The arches, ties, and the railing that protects the ties, become more details than part of an overall form. They are also added elements and mass to the scene that divides the view into “corridors”. The main view becomes narrower than the current view. The arches and ties also interrupt and reduce the view of the mid and background vegetation. The view remains strongly focused and intact, but there is less balance between the fore- and mid-ground components and the vegetation in the view. At this distance the arches, ties, and roadside guide rail, present a character that is very different from the form line and texture of the materials used on the current bridges, and for many of the built features in the park.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option displays significant changes to the scene. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. Viewer response predicted for this option is likely to be high negative.

**Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. Changes to the scene are significant. At the distance of this viewpoint the light weight character of this option is not evident. The changes will likely result in a high negative viewer response.

## Viewpoint No.7B: Option B2 – Steel Girder Bridge



Option B2 is a steel girder structure. From this viewpoint the substructure is not visible. The superstructure is almost identical to option A, which is similar to the current bridge that exists below the Mabey bridge in the existing conditions/no build view. The form line and textures of this option from this view emulate the current stone bridge. The proposed bridge is somewhat wider than the existing structure and occupies slightly more of the view. However it remains framed by and in balance with the existing vegetation. The form, line and texture of the bridge are more consistent with the natural materials used in the construction of the built landscape elements throughout the park. The view remains strongly focused, intact and unified. The removal of the metal Mabey structure lowers the viewpoint and reveals more background vegetation and provides a slightly wider view of the sloped lawn area on Goat Island at the back ground plane of the view.

### **Predicted Viewer Response**

The main viewer groups affected by the changes at this viewpoint are the pedestrian and motorist tourists and worker/residents that may be using the proposed bridge sidewalks or roadway. The completed option presents improvements to the view because of the removal of the Mabey bridge. The character and quality of the introduced structural elements are consistent with the existing stone bridge. Viewer response predicted for this option is likely to be high positive due to recognition of correcting a failing facility and retention and improvement of current view quality.

**Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **low** visual impact. Changes to the scene are significant but positive. The option closely emulates the style and characteristics of the current stone bridge and is improved compared to the no-build with the removal of the Mabey bridge. As noted above, a high level of viewer response is expected but it will likely be highly positive.

### **Viewpoint No. 8: Existing Conditions/No-Build Option**



Viewpoint No. 8 is located outside of Niagara Falls State Park on the Canadian side of the Niagara River. It is on the promenade that runs along the bluffs above the westerly bank of the river. The view is easterly toward the American Falls, which is in the mid-ground and dominates this powerful and memorable scene. The large sky area is balanced by the dynamic “weight” of the falls and the framing foreground and background vegetation. The view to the project location is distant, and the existing bridge blends with the background vegetation and is hardly significant. The scene is highly intact, even the large buildings in the background do little to intrude or interrupt the composition. The view is unified by the dominance of the falls and extremely balanced. This view as an existing or no-build condition presents distinct and dynamic character that is of extremely high quality. It represents one of many memorable views available throughout the project viewshed.

## Viewpoint No.8: Option A - Traditional Concrete Arch Bridge



Option A is a traditional concrete arch bridge that closely emulates the existing bridge. All view characteristics and qualities described for the existing/no-build option are maintained. The dimensional changes to the bridge are meaningless to this view as they are totally imperceptible. The line, form, texture and mass of the bridge are almost identical to the current structure from this viewpoint. There is no noticeable change to the view with this option.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian that may be using the bluff side promenade and overlooks above the west bank of the Niagara River in Canada. Little to no viewer response is predicted for this option at this viewpoint.

### **Resultant Impact Rating**

The resultant impact rating for Option A at this viewpoint is one of **low** visual impact. Changes to the scene are slight, with no change to significant visual resources. The option closely emulates the style and characteristics of the existing.

## Viewpoint No. 8: Option B1 - Steel Tied-Arch Bridge



Option B1 is a steel tied-arch bridge. Visually it is significantly different from the current concrete steel bridge. The superstructure is higher and therefore is visible against the background vegetation. However the bridge is lighter in mass, and the line, form, and texture present an airy and elegant sense. There are only two spans and one pier visible and the deck is thin but at this distance only allows the rapids to be slightly more visible. The superstructure arches being visible changes the character of the scene substantially, because in the existing condition and in Option A, the bridge is almost non-existent and appears as an extension of the vegetation behind the falls.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian that may be using the bluff side promenade and overlooks above the west bank of the Niagara River in Canada. While there is a degree of historic precedent for this type of bridge, no current members of the viewer groups would have any memory of this style. A moderate to high response to the changes in the scene is predicted.

**Resultant Impact Rating**

The resultant impact rating for Option B1 at this viewpoint is one of **high** visual impact. While changes to the scene are significant they are not necessarily negative. The light weight character of this option actually allows natural features to become stronger elements within the view. However, the changes will likely result in a high negative viewer response.

## Viewpoint No.8: Option B2 – Steel Girder Bridge



Option B2 is a steel girder structure. The design is significantly different from the current stone arch bridge. The bridge superstructure and structural elements are narrow and very linear and streamlined. However the dimensional material and form changes to the bridge are almost meaningless to this view because of its extreme distance. The changes and related potential impacts to the scene are nearly imperceptible.

### **Predicted Viewer Response**

The most significant viewer group affected by the changes at this viewpoint is the tourist-pedestrian that may be using the bluff side promenade and overlooks above the west bank of the Niagara River in Canada. Little to no viewer response is predicted for this option at this viewpoint.

### **Resultant Impact Rating**

The resultant impact rating for option B2 at this viewpoint is one of **low** visual impact. Changes to the scene are slight, with no change to significant visual resources. The option while significantly different in design, the changes are nearly imperceptible. The removal of the Mabey bridge improves the view.

## Summary of Impacts

Table VIA-2 below summarizes the predicted viewer response and resultant visual impact rating for each option at the selected viewpoint locations.

**Table VIA-2 Summary of Viewer Response and Resultant Impact Rating**

Viewer Group Response/Resultant Impact					
Viewpoint	Tourist		Worker/Resident		Resultant Impact
	Pedestrian	Motorist	Pedestrian	Motorist	
VP-1, Option A	High Positive	N/A	High Positive	N/A	Low
VP-1, Option B1	Moderate to High Negative	N/A	Moderate to High Negative	N/A	Moderate
VP-1, Option B2	Moderate to High Negative	N/A	Moderate to High Negative	N/A	Moderate
VP-2, Option A	High Positive	N/A	High Positive	N/A	Low
VP-2, Option B2	High Negative	N/A	High Negative	N/A	High
VP-2, Option B1	High Negative	N/A	High Negative	N/A	High
VP-3, Option A	Neutral to High Positive	N/A	Neutral to High Positive	N/A	Low
VP-3, Option B1	Neutral to Mod Positive	N/A	Neutral to Mod Positive	N/A	Low
VP-3, Option B2	Neutral to Mod Positive	N/A	Neutral to Mod Positive	N/A	Low
VP-4, Option A	Low Neg. to High Pos.	Low			
VP-4, Option B1	Moderate to High Negative	High			
VP-4, Option B2	Moderate to High Negative	High			
VP-5, Option A	High Positive	High Positive	High Positive	High Positive	Low
VP-5, Option B1	High Negative	High Negative	High Negative	High Negative	High
VP-5, Option B2	High Positive	High Positive	High Positive	High Positive	Low
VP-6, Option A	High Positive	High Positive	High Positive	High Positive	Low

VP-6, Option B1	Moderate to High Negative	Moderate to High Negative	Moderate to High Negative	Moderate to High Negative	High
VP-6, Option B2	High Positive	High Positive	High Positive	High Positive	Low
VP-7A, Option A	High Positive	High Positive	High Positive	High Positive	Low
VP-7A, Option B1	High Negative	High Negative	High Negative	High Negative	High
VP-7A, Option B2	High Positive	High Positive	High Positive	High Positive	Low
VP-7B, Option A	High Positive	High Positive	High Positive	High Positive	Low
VP-7B, Option B1	High Negative	High Negative	High Negative	High Negative	High
VP-7B, Option B2	High Positive	High Positive	High Positive	High Positive	Low
VP-8, Option A	Neutral	Neutral	Neutral	Neutral	Low
VP-8, Option B1	Moderate to High Negative	Moderate to High Negative	Moderate to High Negative	Moderate to High Negative	High
VP-8, Option B2	Neutral	Neutral	Neutral	Neutral	Low

## **APPENDIX B-7.**

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Draft 4(f) Evaluation

**DRAFT SECTION 4(f) EVALUATION**

P.I.N. 5760.40  
American Falls Bridges

BINs 5522000 and 5522010  
Niagara Falls State Park  
City of Niagara Falls  
Niagara County  
New York

U.S. DEPARTMENT OF TRANSPORTATION  
Federal Highway Administration  
and  
New York State Department of Transportation

Submitted pursuant to 49 U.S.C. 303.

## EXECUTIVE SUMMARY

This draft evaluation is intended to analyze alternatives that avoid 4(f) properties and to determine if they are feasible and prudent. This evaluation references the project's Design Report/Environmental Assessment.

This draft evaluation does not identify a selected alternative or make feasible and prudent determinations. The discussion reserved for the final 4(f) evaluation is beyond the scope of this draft evaluation.

This draft evaluation provides an overview of the Section 4(f) regulatory requirements; describes the project as well as its purpose and need; describes the Section 4(f) properties and potential impacts to them from the project; analyzes avoidance alternatives and measures to mitigate harm to the Section 4(f) property and outlines the coordination with jurisdiction over the Section 4(f) properties.

The draft evaluation identified historic properties that are listed on, and eligible for, inclusion in the National Register of Historic Places are located within the project's area of potential effect. The Niagara Falls State Park and two archeological sites, which qualify as Section 4(f) resources are known to represent the historic sites potentially affected by this project. Additionally, as a publicly owned park, the Niagara Falls State Park qualifies for protection under Section 4(f). FHWA determines whether properties qualify as Section 4(f) resources.

A preferred alternative has not yet been identified.

Once a preferred alternative has been identified, a final Section 4(f) evaluation will be prepared that includes the information included in the draft evaluation, plus additional information.

Following coordination with the applicable regulatory and resource agencies, NYSDOT will issue a Final Section 4(f) Statement regarding the Section 4(f) resources.

## 1.0 REGULATORY SETTING

Section 4(f) (49 United States Code [U.S.C.] 303) of the Department of Transportation Act of 1966 applies to publicly owned parks, recreation areas, wildlife and waterfowl refuges and publicly or privately owned significant historic properties. The requirements of Section 4(f) apply only to agencies within the United States Department of Transportation (USDOT) such as the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Section 4(f) requires that special effort should be made to preserve the natural beauty of the countryside and public parks and recreation lands, wildlife and waterfowl refuges, and archaeological and historic sites (sites listed on or determined to be eligible for listing on the National Register of Historic Places [NRHP]), and that measures should be undertaken to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. Section 4(f) prohibits FHWA from approving the use of any Section 4(f) resource for a transportation project, except under the following conditions:

1. there is no feasible and prudent alternative that would avoid the use of the Section 4(f) resource, and
2. the project includes all possible planning to minimize harm to that property (23 CFR 774.3(a)).

Section 6009 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005, amended Section 4(f) legislation at both Title 49 U.S.C Section 303 and Title 23 U.S.C. Section 138 to simplify the process and approval of projects that have only *de minimis* impacts on Section 4(f) properties. Under these provisions, once FHWA determines that a transportation use of Section 4(f) property results in a *de minimis* impact, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete.

In response to SAFETEA-LU, both FHWA and the FTA proposed comprehensive changes to their Section 4(f) regulations. The new regulations are codified at 23 Code of Federal Regulations (CFR) 774. The new regulations incorporate the *de minimis* use requirements and include a new definition of “all possible planning to minimize harm” as well as a list of factors to consider in determining which alternatives minimize overall harm. This evaluation has been developed in accordance with 23 CFR Part 774 – *Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f))*.

This Section 4(f) analysis:

- Determines the applicability of Section 4(f) to parks and recreation areas within the Study Area for the American Falls Bridges (Project);
- Determines the applicability of Section 4(f) to historic sites identified through the Section 106 process for the Project;
- Assesses use of identified Section 4(f) properties under the Rehabilitation and Replacement Alternatives; and
- Presents supporting documentation for FHWA to make a Section 4(f) approval.

This evaluation also summarizes coordination with the officials with jurisdiction for Section 4(f) resources, including the New York State Historic Preservation Office (SHPO) and New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP).

## 2.0 PURPOSE AND NEED

The purpose of this project is to build safe, structurally sound bridges that provide multi-modal access between Mainland USA, Green Island, and Goat Island within Niagara Falls State Park. The bridge from the mainland to Green Island is BIN 5522000, and the Green Island to Goat Island bridge is BIN 5522010. The need for the project is caused by the deterioration and identified structural deficiencies of the two existing bridges associated with this project, the American Falls Bridges. The existing bridges are both stone-faced concrete arches built in 1900-1901 that provide pedestrian access, and previously trolley access over the Niagara River. Both bridges were closed in 2004, and temporary (Mabey) bridges were installed over each bridge in order to maintain the function of pedestrian access between the mainland and Goat Island, while temporarily losing the function of carrying park trolleys from the mainland to Goat Island. To travel from the mainland to Goat Island, park trolleys are now required to leave the park, use the nearby general transportation infrastructure, and access Goat Island by way of the American Rapids Bridge located upstream and approximately one thousand feet easterly of the American Falls Bridges. The temporary bridges are not acceptable long term because they are not consistent with the character of the area, they restrict views of the American Falls and the rapids immediately above the Falls, they are substantially narrower than the existing bridges, and are inaccessible to trolleys. Figure 1 depicts the boundaries of Niagara Falls State Park, the two bridges subject to the proposed action and the approximate boundaries of the construction zone, where construction may potentially occur as determined during the preliminary project design.

## 3.0 PROPOSED ALTERNATIVES

Project alternatives were developed in order to address and meet the project objectives outlined in the Design Report/Environmental Assessment.

Alternatives under consideration include: (1) Null/Maintenance; (2A) Structure Rehabilitation; (2B) Partial Pier Rehabilitation and (3) Replacement. The alternatives are summarized briefly as follows, and discussed in greater detail in Section 3.2 of the Design Report/Environmental Assessment.

**Alternative 1, Null/Maintenance:** The Null/Maintenance Alternative would involve simply leaving the bridges as they currently exist, with the temporary (Mabey) bridges situated over the concrete arch bridges with no improvements other than routine maintenance. Under the null/maintenance alternative,

the bridge owner (NYSOPRHP) would attempt to maintain pedestrian access and structural integrity by performing repairs sufficient to sustain existing conditions.

Under the null/maintenance alternative, accessibility for future repairs would be obstructed by the temporary (Mabey) bridges. The physical presence of the temporary bridges would continue to block views of the American Falls and the rapids, and continue to complicate future bridge inspections. The temporary bridges would also continue to obstruct access to the waterlines, sewer lines, and other utilities carried by the bridges.

The work required to correct existing structural deficiencies is beyond the scope of routine maintenance under the null/maintenance alternative. The null/maintenance alternative would therefore result in the continued deterioration of the bridges. Continued deterioration of the bridges would create the need for increased maintenance, possibly involving repeated closures for emergency repair work, and would lead to increasingly restrictive load posting, and eventually complete closure.

Therefore, the null/maintenance alternative will not be considered further, except to be carried forward as a benchmark for comparison.

**Alternative 2A, Structure Rehabilitation:** As described in the Design Report, the arch portion of each structure is in poor condition with deteriorated concrete and deteriorating reinforcing steel. The complete removal of the concrete arches would be required, while the existing piers and abutments would be left in place. Under this alternative, extensive repairs would be made to all structural systems and appurtenant features of the two bridges (BINs 5522000 and BIN 5522010). This would require:

- Dewatering of areas of the riverbed, via cofferdams, to create a dry working area
- Removal of the temporary (Mabey) bridge. This would be done to expose the concrete arch bridges,
- Complete removal of the concrete arches, while leaving the piers and abutments in place.
- Removal of bridge features such as pavement, sidewalks, parapet walls, earth fill and stone facing;
- Minor repairs to the piers and abutments, including removal of gunite coating and repair of concrete.
- Reconstruction of the concrete arches. Replacement of earth fill, pavement, sidewalks, parapet walls, and stone facing.
- Reconstruction of the approach roads and pathways, landscaping, lighting, and possibly other utilities within the existing alignment.

Rehabilitation of a portion of the piers of BIN 5522000 is considered feasible because the micropiles installed in 2013 are structurally sound. Rehabilitation of a portion of the piers of BIN 5522000 is discussed further below, as a feasible alternative.

The deteriorated condition of the existing bridges is such that rehabilitation of the superstructure of BIN 5522000 and rehabilitation of the entire BIN 5522010 are not considered feasible. Therefore, the structure rehabilitation alternative is not feasible and it is not discussed further in this evaluation.

**Alternative 2B, Partial Pier Rehabilitation:** This alternative includes the re-use of existing micropiles at the piers of BIN 5522000.

This would require:

- Dewatering of areas of the riverbed, via cofferdams, to create a dry working area
- Removal of the temporary (Mabey) bridge.
- Complete removal of the concrete arches.
- Reuse of the micropiles at the piers of BIN 5522000. Removal of the existing concrete surrounding the micropiles, installation of dowels into the existing concrete between the micropiles, installation of additional micropiles and placement of a reinforcing cage around each pier;

- Complete replacement of BIN 5522010.
- Reconstruction and widening of the approach roads and pathways, landscaping, lighting, and possibly other utilities.

This alternative is only feasible if the new bridge is constructed on the same alignment and with the same span configuration.

**Alternative 3, Replacement:** Under the Replacement Alternative, the existing bridges would be completely removed, and new bridges would be constructed. Alternative 3 has two alignment options: replace the bridges on the existing alignment or replace one or both bridges on a new horizontal alignment.

The design report for this project describes optional types of replacement bridges, but for the purposes of this 4(f) evaluation, the type of bridge is not considered relevant.

Other work associated with the Replacement Alternative would include:

- Reconstruction and widening of the approach roads and pathways, landscaping, lighting, and possibly other utilities;
- Dewatering of areas of the riverbed and installation of cofferdams upstream of the existing bridges to create a dry working area.

The Replacement Alternative is feasible alternative for this project.

### **Plan View Drawings and Typical Sections**

Attached to this evaluation are several plan view drawings that depict the areal extent of the proposed project under the alternatives listed above. These drawings include:

- Drawing No. A-2 Sheet Nos 1-4 which depict plan views of existing conditions and the areal extents of proposed project under the Null/Maintenance and Structure Rehabilitation Alternatives;
- Drawing No. A-6 Sheet Nos 1-4; which depict plan views of proposed conditions under the Partial Pier Rehabilitation and Replacement Alternatives on the existing horizontal alignment;
- Drawing No. A-10 Sheet Nos 1-4; which depict plan views of proposed conditions under the Partial Pier Rehabilitation and Replacement Alternatives following a new horizontal alignment;
- Drawing No. A-4, Sheet No. 2 which depicts the typical roadway section for Green Island under existing conditions (i.e. the Null/Maintenance and Structure Rehabilitation Alternatives); and
- Drawing No. A-14, Sheet No. 1 which depicts the typical roadway section for Green Island under proposed conditions (i.e. the Partial Pier Rehabilitation and Replacement Alternatives).

## **4.0 IDENTIFICATION OF SECTION 4(f) RESOURCES**

The Study Area is identified in Figure 1 and includes the boundaries of Niagara Falls State Park, the two bridges subject to the proposed action, and the approximate boundaries of the construction zone.

FHWA determines whether properties qualify as Section 4(f) resources.

### **4.1. Section 4(f) Historic Sites**

Section 4(f) historic sites are identified through the consultation process established under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulation, 36 CFR Part 800, Protection of Historic Properties. Buildings, structures, objects and architectural districts listed in, or determined eligible for listing in the National Register of Historic Places (NRHP) are considered Section 4(f) properties. To date, Niagara Falls State Park and two archeological sites within the park are known to represent the historic sites potentially affected by this project.

**The State Reservation at Niagara (now Niagara Falls State Park)** was listed on the NRHP on October 15, 1966 as Niagara Reservation, No. 66000555. The park is also recognized as a National Historic Landmark.

**The American Falls Bridges**, built in 1900 – 1901, are *contributing elements* of the NRHP-listed park.

Archaeological sites listed on or eligible for inclusion on the NRHP, including those discovered during construction, are protected by Section 4(f), with certain exceptions (23 CFR 774.11(f)). Section 4(f) does not apply if FHWA, after consultation with the official with jurisdiction, determines that “the archaeological resource is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place” (23 CFR 774.13(b) (1)).

Consultation with the New York State Historic Preservation Office (NYSHPO) was initiated in March 2014 and included the submittal of the Phase IA/IB Cultural Resource Survey and request for review and comment. In April 2014, NYSHPO indicated that they would require additional site investigation in order to make an impact determination. These evaluations included an additional Phase IB archeological reconnaissance survey and a Phase II Site Examination. The additional investigation was conducted at the site in December 2014 in accordance with the New York Archaeological Council’s Standards for Cultural Resource Investigations and the Curation of Archaeological Collections (1994), which are endorsed by NYSOPRHP. A report entitled Additional Phase IB Archeological Reconnaissance and Phase II Site Evaluations of the Goat Island Site (A06340.001961) and the Green Island Site (A06340.001962) has been prepared according to NYSOPRHP’s State Historic Preservation Office (SHPO) Phase I Archeological Report Format Requirements (2005). Based upon the analysis provided in archaeological report, both the Goat Island and Green Island Sites are considered to be archaeological sites eligible for individual listing on the NRHP.

The Section 106 process may determine these two archaeological sites could be affected by the project.

#### **4.2 Parks, Recreation Areas, and Refuges**

Public lands that may qualify for protection under Section 4(f) are parks and recreation areas of national, state, or local significance that are both publicly owned and open to the public, and wildlife and waterfowl refuges. Within the context of Section 4(f), the land must be officially designated as a park or recreation area by a federal, state or local governmental agency and the official with jurisdiction over the land has determined that its primary purpose is a park or recreation area.

Niagara Falls State Park, where the project is located, is owned by the State of New York, and is operated and maintained by the New York State Office of Parks Recreation and Historic Preservation (NYSOPRHP). This is the only park and recreational resource within the Study Area. Niagara Falls State Park includes land located on the mainland southerly of the Robert Moses Parkway as well as several islands within the Niagara River, including Goat Island and Green Island. The park is the oldest state park in the nation, was established in 1885 and then known as the State Reservation at Niagara. The park provides scenic overlooks to the rapids of the Niagara River above the American and Canadian Falls as well as scenic overlooks of the two falls themselves.

This park is listed in the National Register of Historic Places and is a National Historic Landmark. As a publicly owned park, the Niagara Falls State Park qualifies as a Section 4(f) resource.

The project does not involve work in, or adjacent to, a wildlife or waterfowl refuges.

### **5.0 USES OF SECTION 4(f) RESOURCES**

As described above, Niagara Falls State Park and the Goat Island and Green Island Archaeological Sites represent the **historic resources** and Niagara Falls State Park represents a **park and recreational**

**resource** potentially affected by this project. This assertion requires a determination by NYSDOT, concurrence by NYSOPRHP, via the 106 Process (see Section 8 of this evaluation).

23 CFR 774.17 regulations require the evaluation of the potential for a “use” of identified Section 4(f) properties within the project area, and FHWA is responsible for determining whether a project would result in the “use” of a Section 4(f) resource. This determination is made based on information developed during the SEQRA process and considers input received from officials with jurisdiction over the Section 4(f) resource.

FHWA regulations define three types of “uses” of 4(f) resources:

1. When the resource is permanently incorporated into a transportation facility, except as set forth in Section 774.11 and 774.13;
2. When there is a temporary occupancy of the land that is adverse in terms of the statute’s preservation purpose as determined by criteria in Section 774.13(d); or
3. When there is a constructive use of Section 4(f) property as determined by the criteria in Section 774.15.

A *temporary occupancy* results when a Section 4(f) property is not permanently incorporated in a transportation facility, but is needed for construction-related activities that are considered to be adverse. Under the provisions of 23 CFR 774.13(d), temporary occupancies of land may be “so minimal as to not constitute a use within the meaning of Section 4(f).”

A *constructive use* occurs when a transportation project does not incorporate land from a Section 4(f) property, “but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired.” The regulations state that a substantial impairment occurs “only when the protected activities, features, or attributes of the resource are substantially diminished” (23 CFR 774.15(a)).

Under certain circumstances, FHWA may grant Section 4(f) approval by making a *de minimis* impact determination. For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). (23 CFR 774.17) In making this determination, FHWA must consider any avoidance, minimization, mitigation, or enhancement measures that have been incorporated into the project. An analysis of “feasible and prudent avoidance alternatives” is not required for *de minimis*. FHWA’s finding of *de minimis* use requires the concurrence of the authority with jurisdiction over the resource, and an opportunity for public review and comment. The public involvement requirements associated with the SEQRA process satisfy the public notice and comment requirements for a Section 4(f) *de minimis* impact finding. When a finding of *de minimis* use is made for a Section 4(f) resource, the requirements of Section 4(f) are satisfied.

A finding of “no use” is made when an alternative avoids any direct physical impact on a Section 4(f) property and there would be no constructive or temporary use. For historic properties, this Section 4(f) finding of “no use” generally corresponds to a finding of “no effect” or “no historic properties affected” as a result of the Section 106 process.

### **5.1 Alternative 1, Null/Maintenance**

The Null/Maintenance Alternative would not result in the use of any Section 4(f) resources.

### **5.2 Alternative 2B, Partial Pier Rehabilitation**

#### **Historic Sites**

The reconstruction of the BINs 5522000 and 5522010 would represent a **use of these two contributing elements** of the Niagara Falls State Park as a historic site.

A **use of Goat Island archaeological site** will be avoided under this alternative. However; although measures will be taken to minimize harm (see Section 7.0), the existing road and sidewalks will be widened and additional grading will be required on Green Island. These activities may result in the **use of the Green Island archeological site**, a potentially NRHP-eligible site. Archaeologically sensitive areas will need to be monitored during construction by qualified professional archaeologists, to ensure that any resources that may be present beneath deep fill or existing pavement are appropriately addressed in accordance with anticipated Section 106 obligations. In the event that additional archaeological resources are encountered during construction, the applicability of Section 4(f) will be determined by the FHWA, in coordination with NYSDOT, and in consultation with NYSHPO.

#### **Parks/Recreation Areas**

The rehabilitation of the two bridges between the mainland and Goat Island within Niagara Falls State Park will require replacing existing pavement with new pavement within an existing park. Reconstruction of the bridges will result in changes to the existing approaches to the bridges. It is expected that FHWA will determine that the proposed construction will **not constitute a transportation use** of this 4(f) resource as a park/recreation area. Additionally, the project **would not result in a constructive use** of the park because there will be no substantial impairment of the activities, features, or attributes that qualify Niagara Falls State Park for Section 4(f) protection as a publicly owned park.

### **5.3 Alternative 3, Replacement**

#### **Historic Sites**

The reconstruction of the BINs 5522000 and 5522010 would represent **a use of these two contributing elements of the Niagara Falls State Park as a historic site.**

A **use of Goat Island archaeological site** will be avoided under this alternative. However; although measures will be taken to minimize harm (see Section 7.0), the existing road and sidewalks will be widened and additional grading will be required on Green Island. These activities may result in the **use of the Green Island archeological site**, a potentially NRHP-eligible site. Archaeologically sensitive areas will need to be monitored during construction by qualified professional archaeologists, to ensure that any resources that may be present beneath deep fill or existing pavement are appropriately addressed in accordance with anticipated Section 106 obligations. In the event that additional archaeological resources are encountered during construction, the applicability of Section 4(f) will be determined by the FHWA, in coordination with NYSDOT, and in consultation with NYSHPO.

#### **Parks/Recreation Areas**

The rehabilitation of the two bridges between the mainland and Goat Island within Niagara Falls State Park will require replacing existing pavement with new pavement within an existing park. Replacement of the bridges will result in changes to the existing approaches to the bridges. It is expected that FHWA will determine that the proposed construction **will not constitute** a transportation use of this 4(f) resource as a park/recreation area. Additionally, the project **would not result in a constructive use** of the park because there will be no substantial impairment of the activities, features, or attributes that qualify Niagara Falls State Park for Section 4(f) protection as a publicly owned park.

### **6.0 AVOIDANCE ALTERNATIVES**

FHWA, is required to avoid and, where avoidance is not feasible and prudent, minimize the use of public parks, recreation areas, wildlife and waterfowl refuges and historic sites by a project. Unless the use of a Section 4(f) property is determined to have a *de minimis* impact, FHWA must determine that no feasible and prudent avoidance alternative exists before approving the use of such land (See 23 CFR 774.3). The Section 4(f) regulations refer to an alternative that would not require the use of any Section 4(f) property as an avoidance alternative. Feasible and prudent avoidance alternatives are those that avoid using any Section 4(f) property and do not cause other severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) property (23 CFR 774.17).

Other than the Null/Maintenance Alternative, there is no alternative that would completely avoid the use of any Section 4(f) property, since the use of the bridges, which are two contributing elements to the NRHP-listed Niagara Falls State Park, is required to meet the purpose and need for the project. The deteriorated condition of the existing bridges requires the full replacement of both bridges. Location alternatives, different modes of transportation and alignment shifts are irrelevant because the bridges require replacement to meet the purpose and need of the project.

It is expected that following the required reviews the proposed construction will not constitute a transportation use of this 4(f) resource as a park/recreation area. Additionally, the project would not result in a constructive use of the park because there will be no substantial impairment of the activities, features, or attributes that qualify Niagara Falls State Park for Section 4(f) protection as a publicly owned park.

Design modifications were also examined to determine if avoidance of specific Section 4(f) resources is possible. Avoidance of the Goat Island archaeological site is feasible. On Green Island it appears that most archaeological deposits are buried fairly deeply. Shallow areas of deposits were identified in the northeasterly portion of the island and within the northwesterly portion of the island. The vertical and horizontal boundaries of the archeological sites as related to specific construction activities are subject to further review.

## **7.0 MEASURES TO MINIMIZE HARM**

Measures to minimize harm, including avoidance, minimization, and enhancement measures will need to be incorporated into the project.

The following paragraphs summarize anticipated efforts to be taken to avoid and minimize impacts to the Section 4(f) resources for the project. Chapter 3 of the Design Report/Environmental Assessment details the technical and engineering characteristics of the considered alternatives. It is anticipated that future edits to this evaluation will describe and document past, current, and future coordination efforts associated with Section 4(f) approvals for the project. Future additions to this evaluation will also document consultation efforts to avoid or minimize effects on historic properties. Based on input from the public, involved agencies, consulting parties, and the NYSOPRHP, it is anticipated that design modifications will be incorporated into the project to avoid and minimize harm to Section 4(f) properties, while still meeting the purpose and need of the project.

- Proposed green space improvements on Green Island following the removal and reconstruction of the two American Falls bridges would be consistent with and enhance the character of the setting within the park. Further consultation with NYSOPRHP will take place during final design to ensure maintenance of the historic integrity of the park.
- Maintaining the safe passage of users of Niagara Falls State Park during construction of the project would mitigate potential construction-related impacts. Appropriate warning signs and fencing would be installed or erected.

Archeological monitoring in and around the bridge abutments will be warranted due to the needed depths of excavation for removal and replacement of the existing abutments. An avoidance and monitoring plan and protocol for the work to be conducted on Green Island should be developed in coordination with NYSHPO. The plan should clearly describe both the long-term and short-term effects of the chosen alternative on the archeological resources of the islands, and include long-term and short-term protective measures with respect to identified archeological resources. The plan should include a protocol for the investigation, recordation, documentation, and analysis of uncovered deposits and features. The plan should also include a chain of command, the anticipated support needed from the construction contractor, an estimate of potential work stoppages, an unanticipated discoveries plan, and a method of disseminating information to relevant parties. The monitoring plan should also include a schedule for the

analysis of the recovered artifacts, report writing protocols, and protocols for delivery of artifacts to a suitable repository.

## **8.0 COORDINATION**

The Section 4(f) evaluation requires coordination with the officials with jurisdiction including NYSHPO for Section 4(f) historic sites, and NYSOPRHP as owner and administrator of Niagara Falls State Park. In addition, impact findings require coordination for public notice and comment on the Section 4(f) determinations.

It is anticipated that coordination requirements for Niagara Falls State Park as a Section 4(f) historic site will be met through the Section 106 process. Consultation with NYSHPO was initiated in March 2014 and included the submittal of the Phase IA/IB Cultural Resource Survey and request for review and comment. In April 2014 NYSHPO indicated that they would require additional site evaluations in order to make an impact determination. These evaluations included an additional Phase IB archeological reconnaissance as well as a Phase II Site Examination. These additional evaluations were conducted at the site in December 2014 and a report detailing the findings of these evaluations was subsequently prepared.

Future anticipated consultation with NYSHPO will include an assessment of the project's effects, a process that will also involve the participation of Section 106 Consulting Parties. Section 106 Consulting Parties will be invited to articulate their views regarding the project's effects on historic sites and will need to be provided an opportunity to review and comment on the Section 106 Finding Documentation.

NYSDOT will provide summary documentation for the Section 106 finding of effects to NYSHPO. FHWA will need to review documentation submitted by NYSDOT. FHWA will need to note that the public was afforded an opportunity to comment during various meetings, and will have an additional opportunity to comment during a public hearing and comment period for the Design Report and Environmental Assessment.

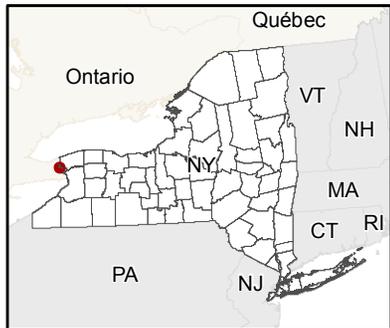
In addition to providing summary documentation, NYSDOT will request that NYSHPO provide written concurrence.

It is anticipated that the public involvement requirements for the project's impact findings will be satisfied by providing opportunities for comment at public meetings, a public review period for the Design Report and Environmental Assessment, and a public hearing.

# FIGURES

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- Figure 1 – General Study Area
- Plan View Drawings and Typical Sections



-  Niagara Falls State Park
-  Approximate Construction Zone Boundary
-  Streets

Figure 1  
General Study Area:  
Construction Area

Niagara County, New York

July 2015

SOURCE: ESRI 2010, E&E 2014,  
Niagara County 2014

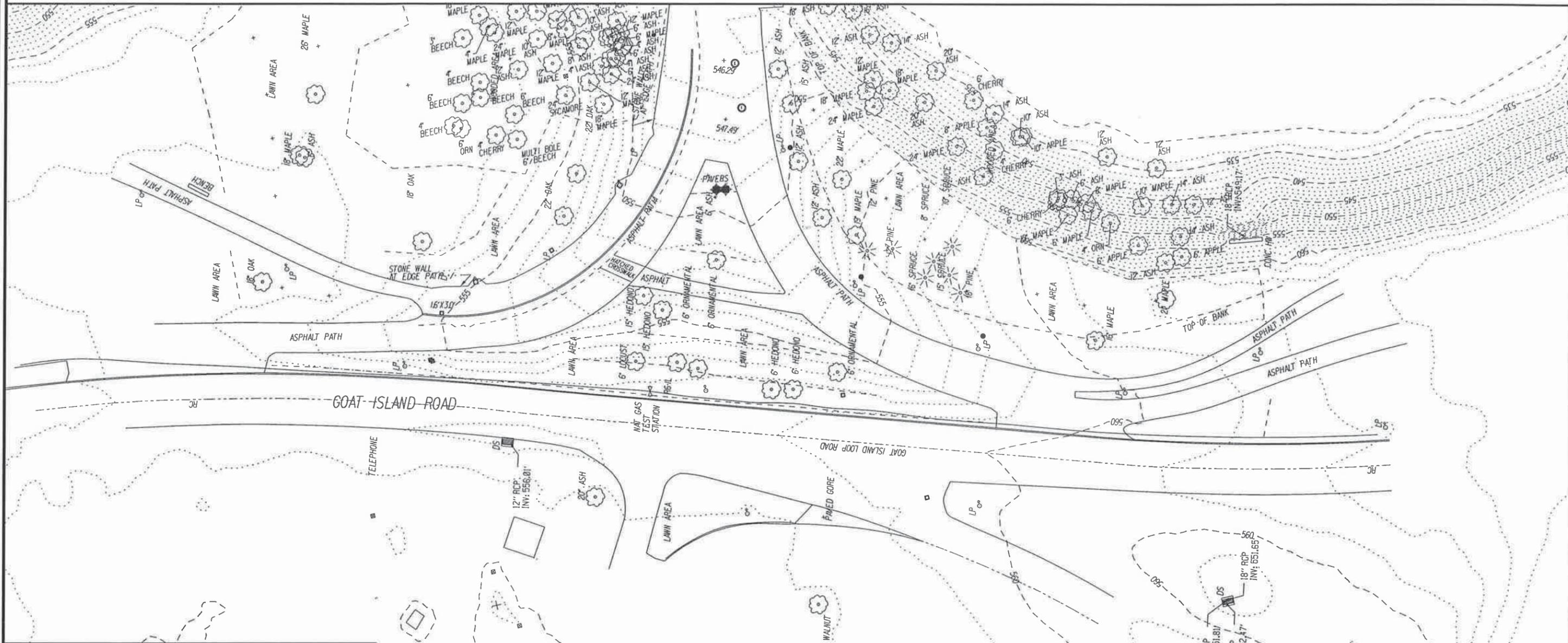
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PROJECT MANAGER: T. WOODBURY  
 CHECK: DRAFTING: A. BALANEVSKIY  
 CHECK: DESIGN: B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR



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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES	PIN 576040
COUNTY: NIAGARA	

BRIDGES 5522000 5522010	CULVERTS NONE
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ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
GENERAL PLAN- EXISTING	
	DRAWING NO. A-2
	SHEET NO. 1

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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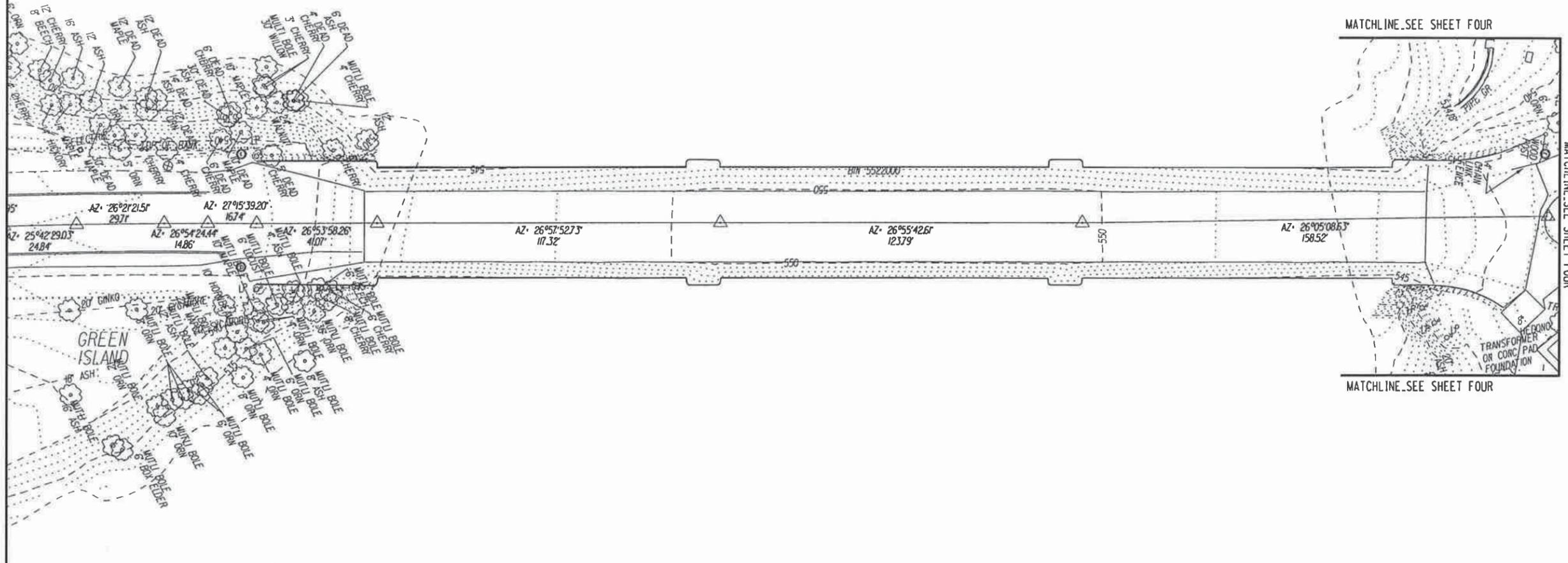


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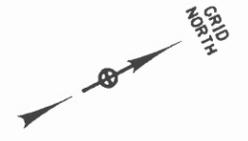
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↑ NIAGARA RIVER



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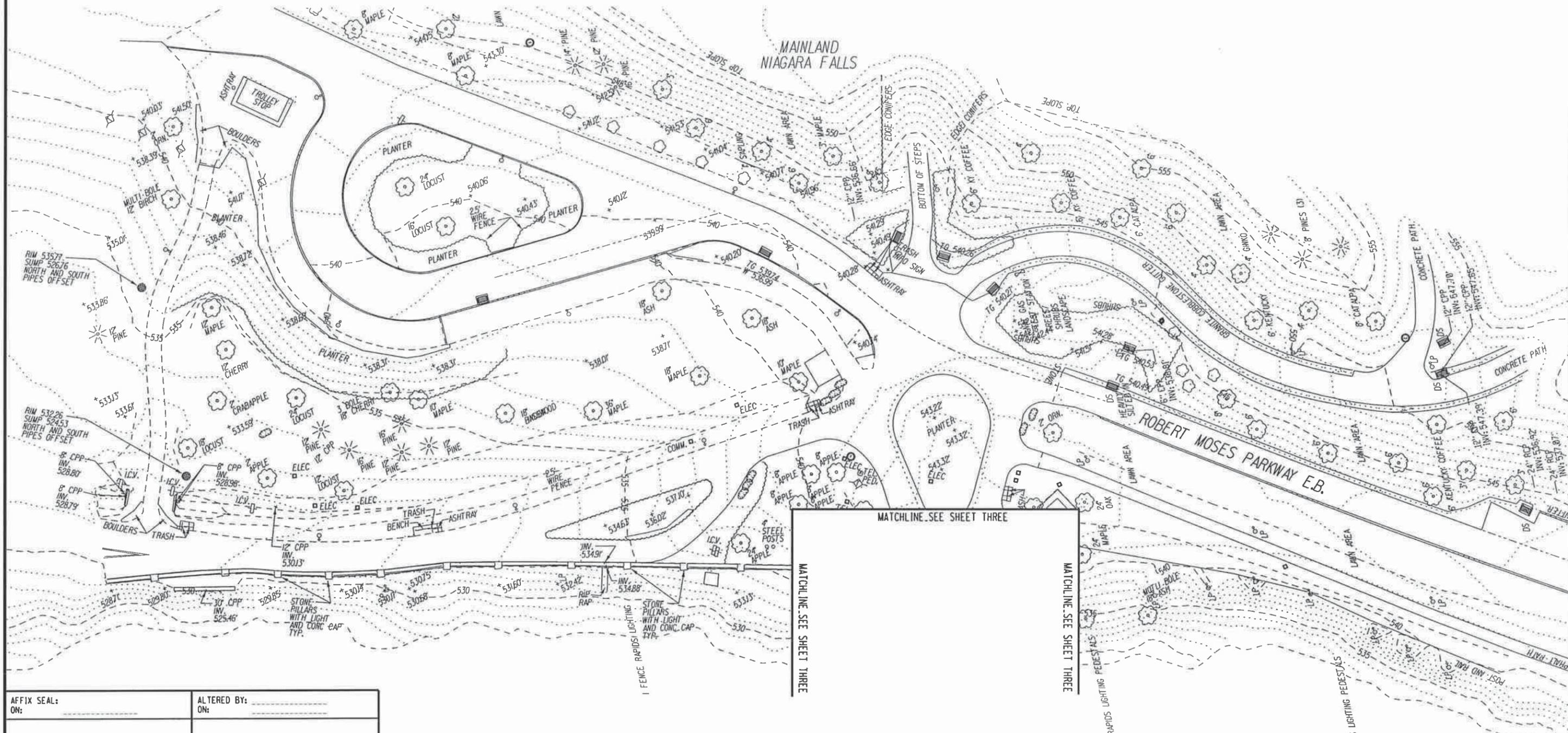
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 PROJECT MANAGER



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NIAGARA FALLS PEDESTRIAN BRIDGES

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 OFFSET 5.0'  
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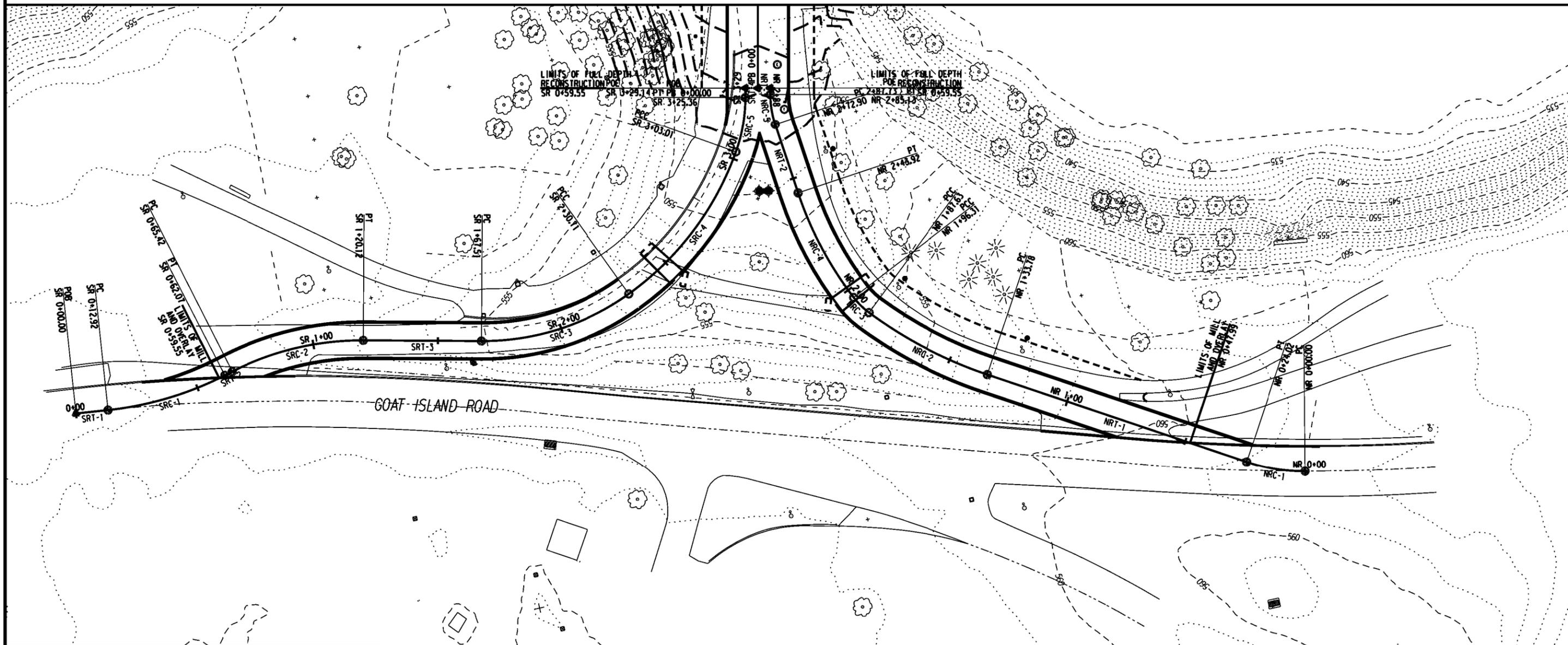
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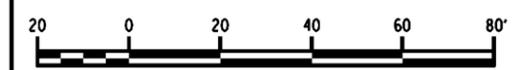
PROJECT MANAGER T. WOODBURY  
 CHECK DRAFTING A. BALANEVSKIY  
 CHECK DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR

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 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
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 GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER  
 DRAWING NO. A-6  
 SHEET NO. 1



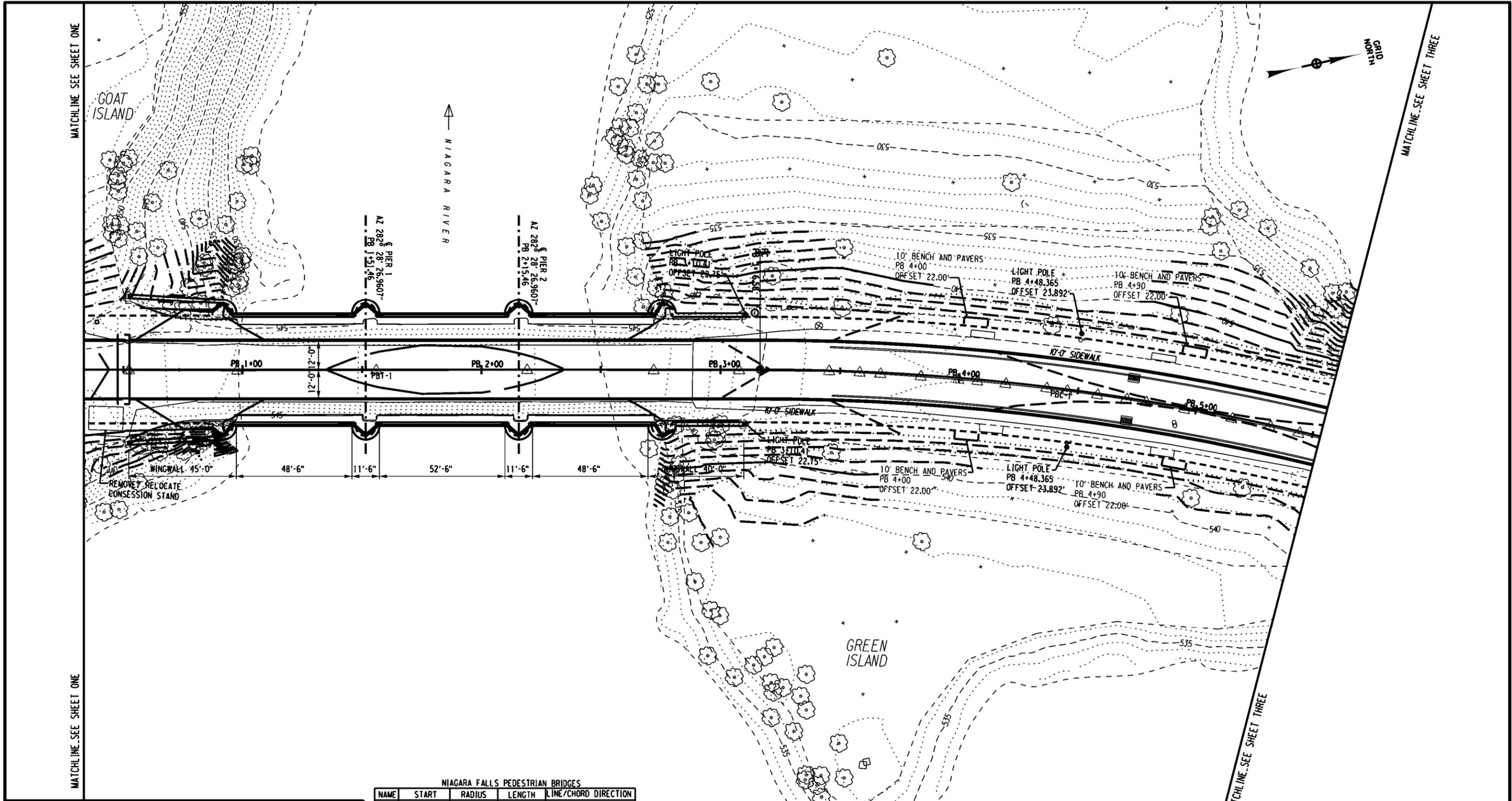
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PROJECT MANAGER: J. WOODBURY  
 CHECK: DRAFTING: A. BALANEVSKIY  
 CHECK: DESIGN: B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR



**NIAGARA FALLS PEDESTRIAN BRIDGES**

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749"



AFFIX SEAL: \_\_\_\_\_  
 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

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 DESCRIPTION OF ALTERATIONS:

COUNTY: NIAGARA

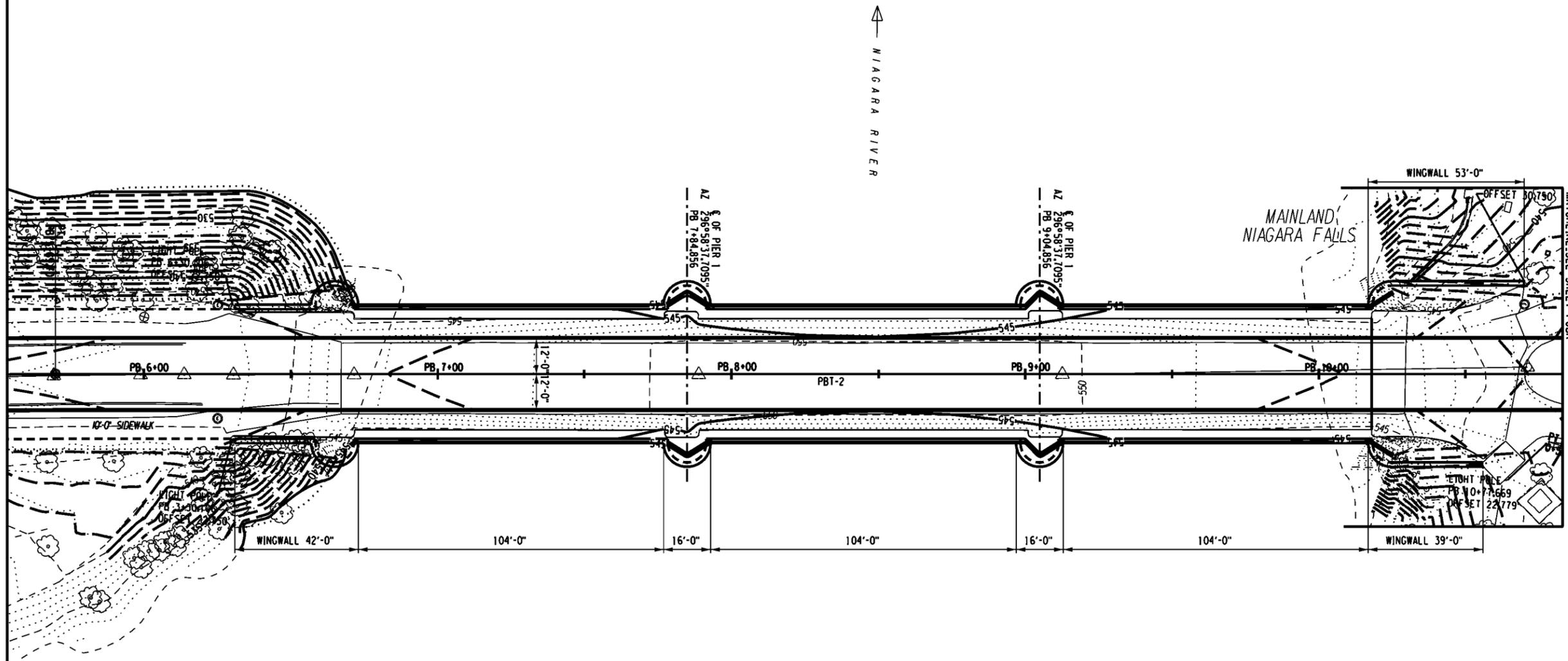
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				GENERAL PLAN- PRECAST CONCRETE ARCH	DRAWING NO. A-6
					SHEET NO. 2
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5 DOCUMENT NAME: DESIGN REPORT	

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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DESIGN SUPERVISOR: \_\_\_\_\_ JOB MANAGER: \_\_\_\_\_ DESIGNER: B. CARLSON CHECK: \_\_\_\_\_ DRAFTER: A. BALANEVSKIY CHECK: \_\_\_\_\_ PROJECT MANAGER: \_\_\_\_\_

MATCHLINE-SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-1	PB 3+16.58	1000	253.1249'	DELTA 14° 30' 10.749°
PBT-2	PB 5+69.7	N/A	528.233'	AZ 26° 58' 37.700°



AFFIX SEAL: \_\_\_\_\_ ON: \_\_\_\_\_  
 ALTERED BY: \_\_\_\_\_ ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER  
 DRAWING NO. A-6  
 SHEET NO. 3

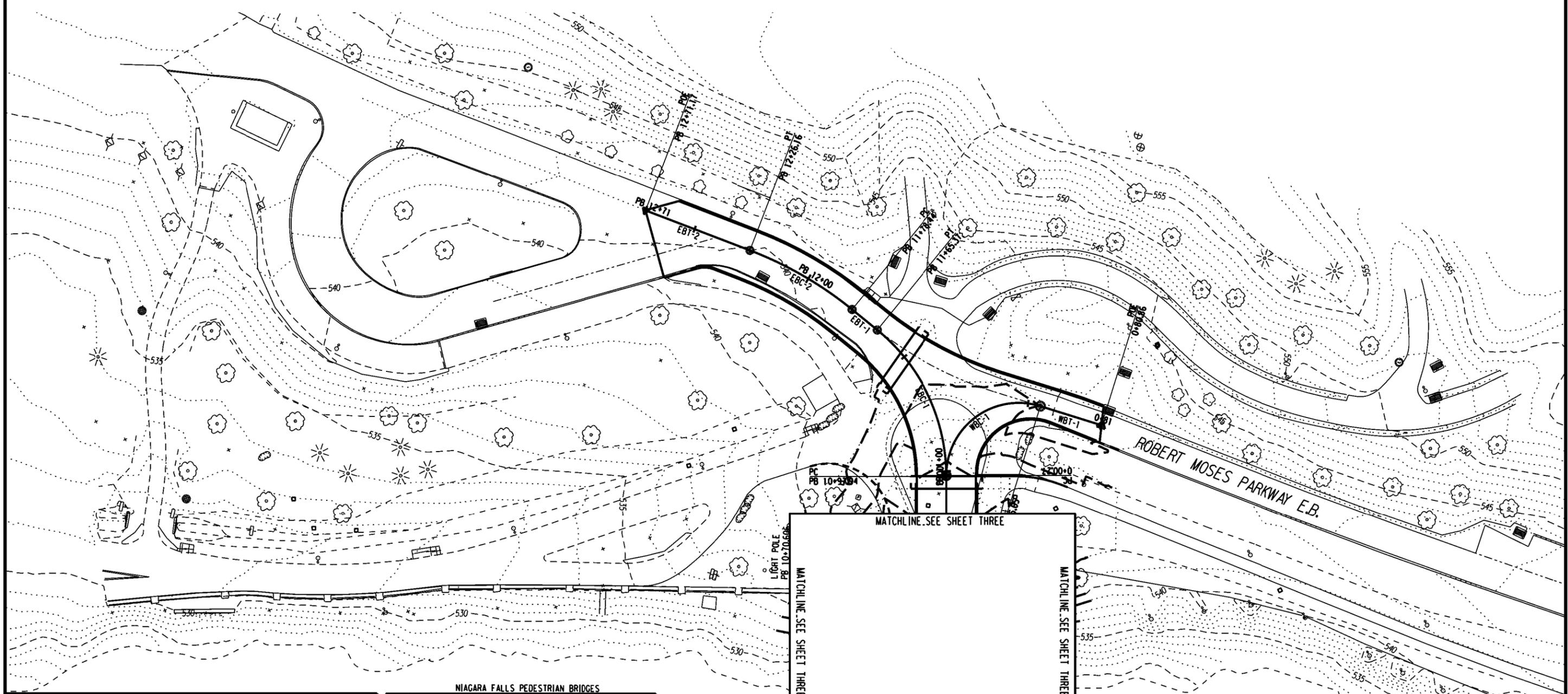
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

FILE NAME = 576940.rpt.ddr-General Plans and Profiles.dgn  
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DESIGN SUPERVISOR  
 JOB MANAGER  
 DESIGNER: B. CARLSON  
 CHECKER: A. BALANEVSKIY  
 CHECKER: PROJECT MANAGER



AFFIX SEAL: ON: \_\_\_\_\_  
 ALTERED BY: ON: \_\_\_\_\_

NIAGARA FALLS PEDESTRIAN BRIDGES

NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-2	PB 5+69.70	N/A	528.233'	AZ 26° 58' 37.700"



AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES
COUNTY: NIAGARA

PIN	BRIDGES 5522000 5522010	CULVERTS NONE
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ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
GENERAL PLAN - PRECAST CONCRETE ARCH	DRAWING NO. A-6
	SHEET NO. 4

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

NIAGARA FALLS PEDESTRIAN BRIDGES

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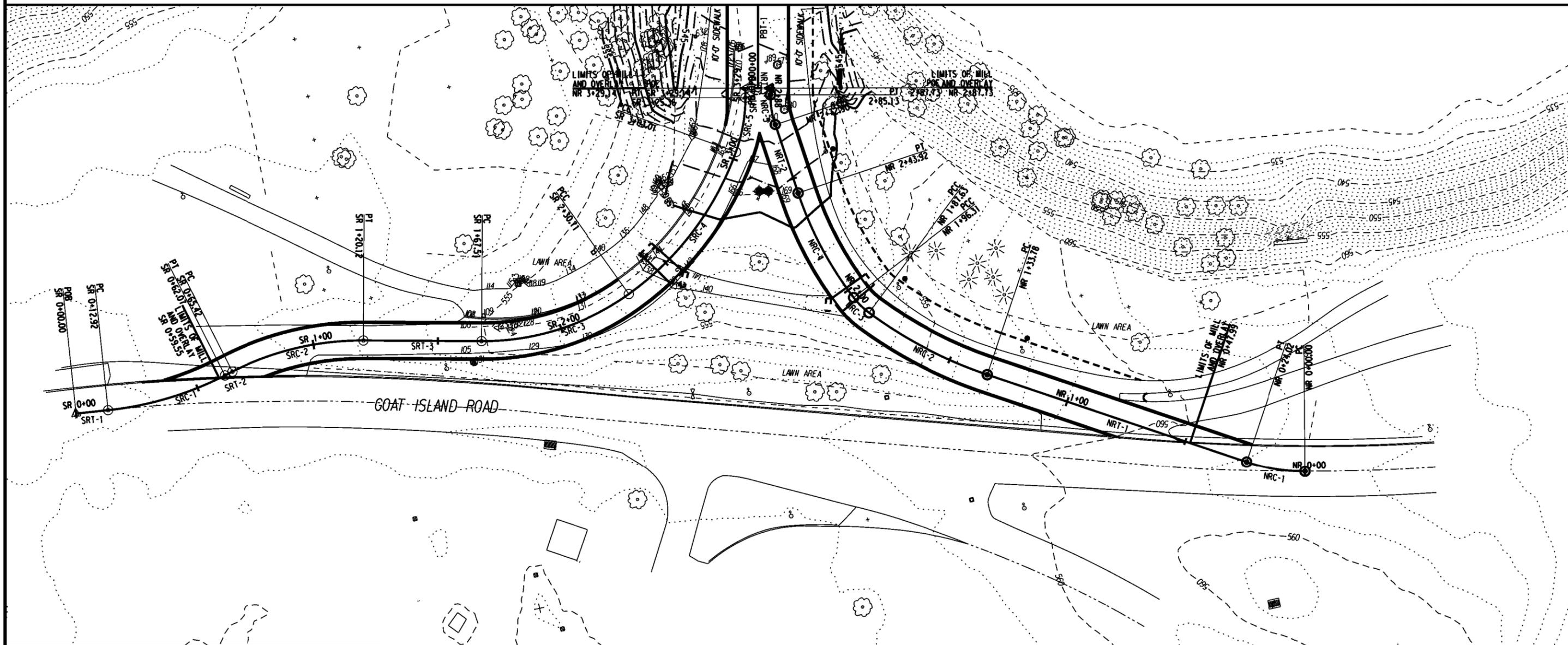
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 NR 2+88  
 SR 3+29

GRID NORTH



MATCHLINE-SEE SHEET TWO

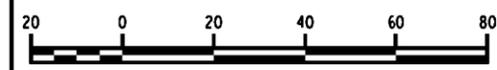
MATCHLINE-SEE SHEET TWO



PROJECT MANAGER: T. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

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AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

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AMERICAN FALLS BRIDGES

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COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER

DRAWING NO. A-10

SHEET NO. 1

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 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
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DESIGN SUPERVISOR

JOB MANAGER

CHECK

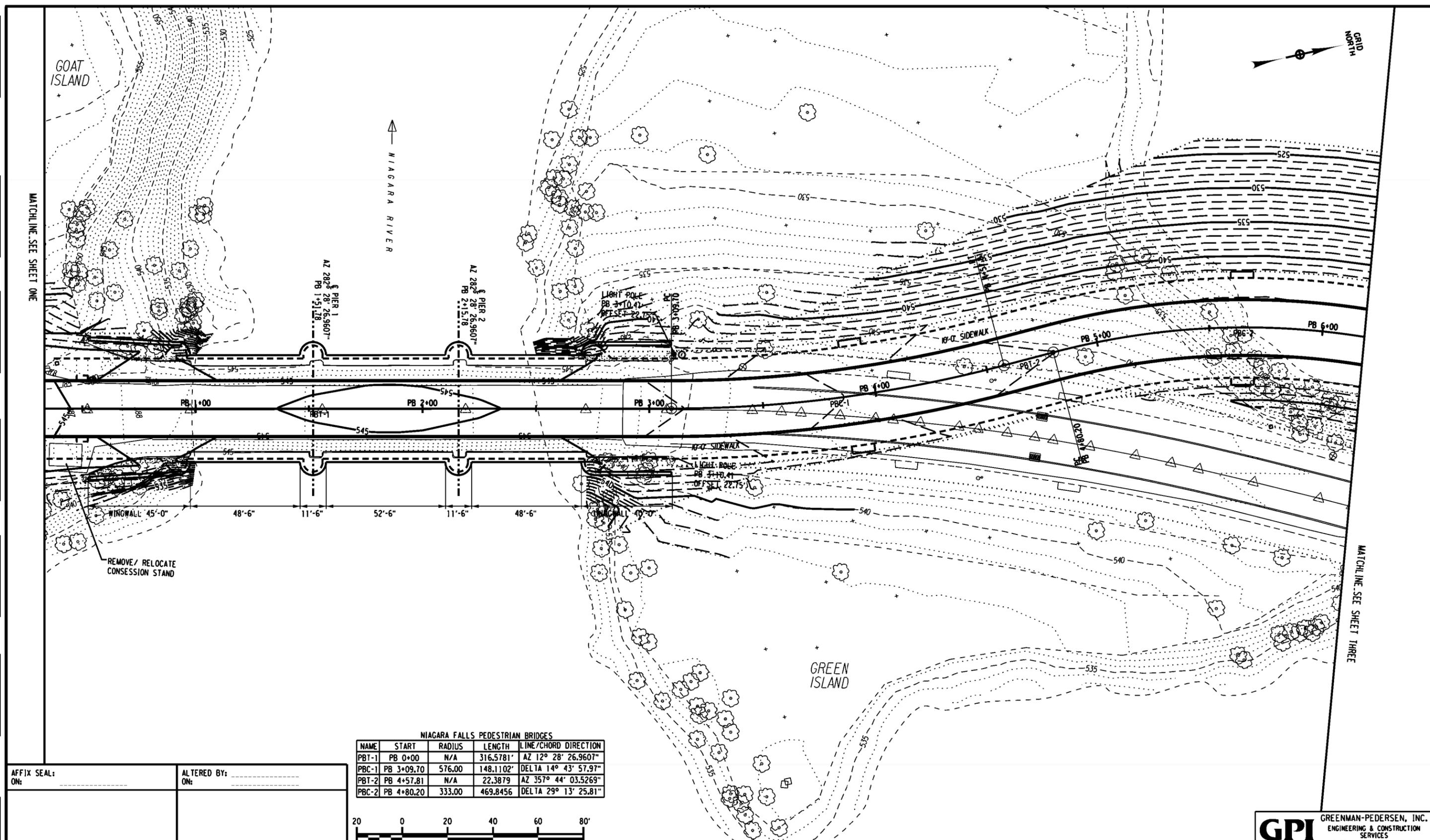
DESIGN B. CARLSON

CHECK

DRAFTING A. BALANEVSKIY

CHECK

PROJECT MANAGER I. WOODBURY



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBT-1	PB 0+00	N/A	316.5781'	AZ 12° 28' 26.9607"
PBC-1	PB 3+09.70	576.00	148.1102'	DELTA 14° 43' 57.97"
PBT-2	PB 4+57.81	N/A	22.3879'	AZ 357° 44' 03.5269"
PBC-2	PB 4+80.20	333.00	469.8456'	DELTA 29° 13' 25.81"



AFFIX SEAL: ON: \_\_\_\_\_  
 ALTERED BY: ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES  
 COUNTY: NIAGARA

PIN 576040  
 BRIDGES 5522000 5522010  
 CULVERTS NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED  
 GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER  
 DRAWING NO. A-10  
 SHEET NO. 2

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT



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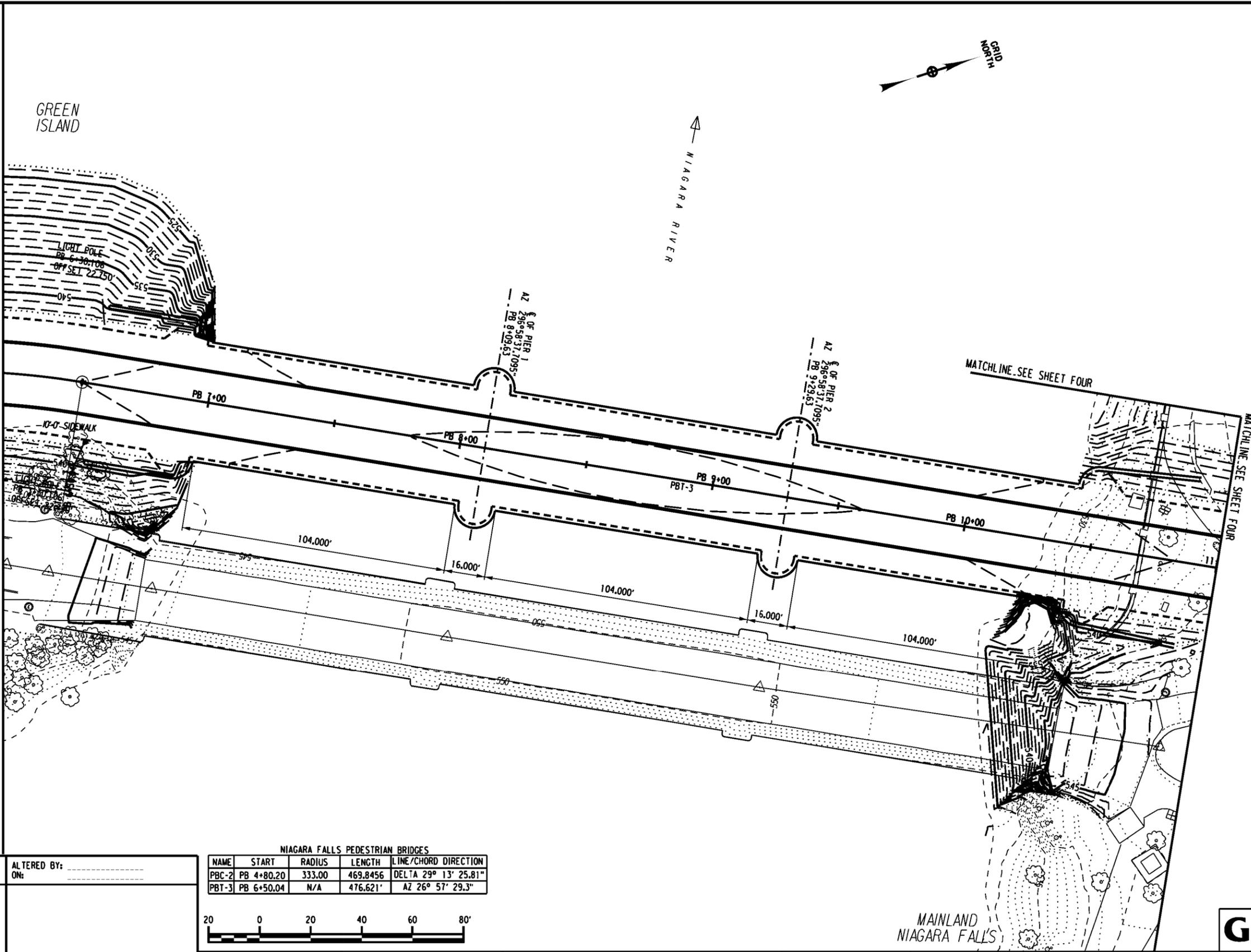
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DESIGN SUPERVISOR: \_\_\_\_\_  
 JOB MANAGER: \_\_\_\_\_  
 DESIGNER: B. CARLSON  
 CHECKER: \_\_\_\_\_  
 DRAFTER: A. BALANEVSKIY  
 CHECKER: \_\_\_\_\_  
 PROJECT MANAGER: I. WOODBURY

MATCHLINE: SEE SHEET TWO



NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
PBC-2	PB 4+80.20	333.00	469.8456	DELTA 29° 13' 25.81"
PBT-3	PB 6+50.04	N/A	476.621'	AZ 26° 57' 29.3"



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 ON: \_\_\_\_\_

ALTERED BY: \_\_\_\_\_  
 ON: \_\_\_\_\_

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES

COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- PRECAST CONCRETE ARCH

CONTRACT NUMBER \_\_\_\_\_

DRAWING NO. A-10

SHEET NO. 3

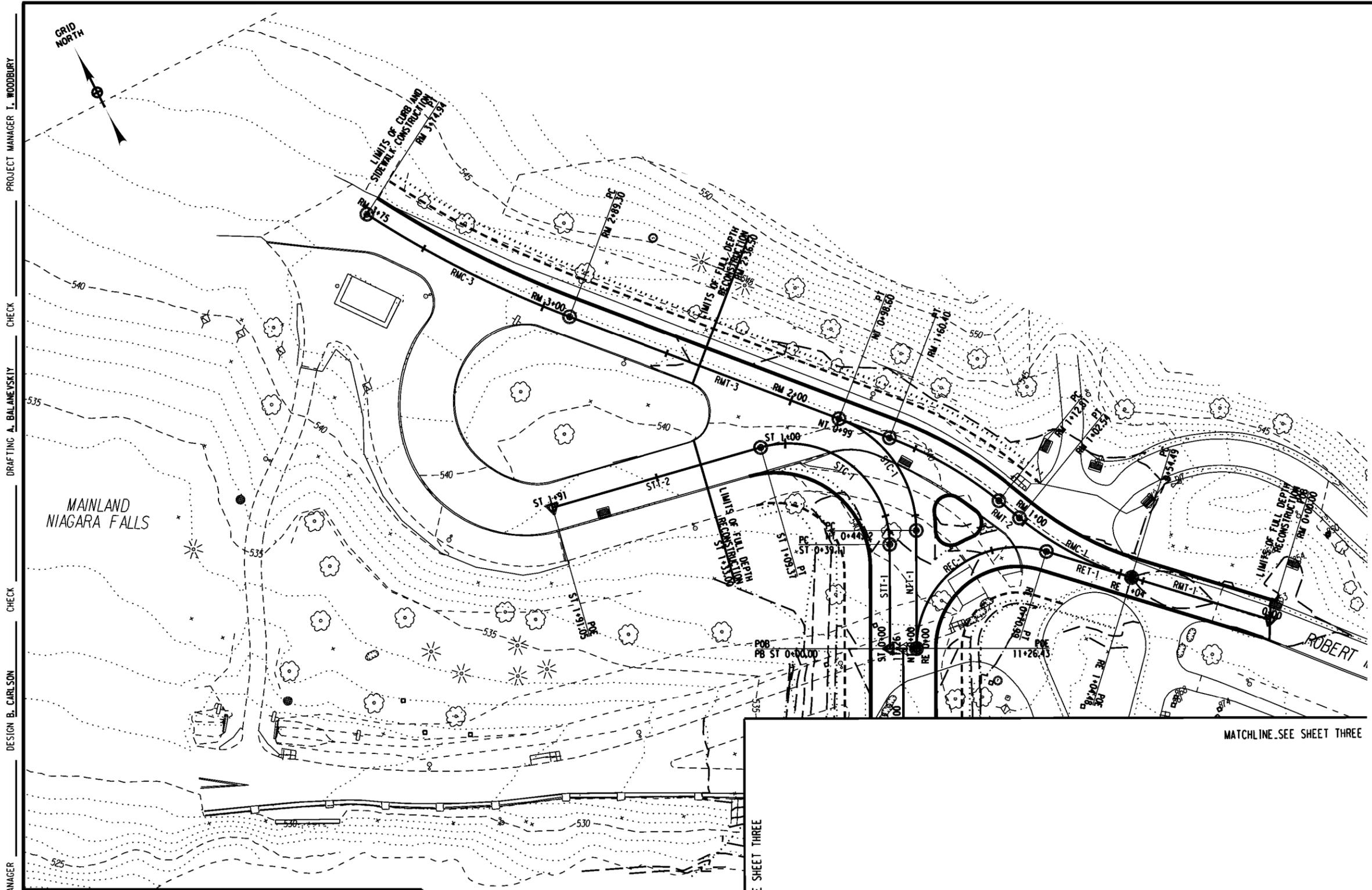
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

NIAGARA FALLS PEDESTRIAN BRIDGES				
NAME	START	RADIUS	LENGTH	LINE/CHORD DIRECTION
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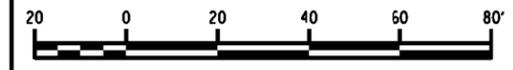
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 OFFSET 5.0'  
 RE 0+00  
 ST 0+00  
 NT 0+00



PROJECT MANAGER: J. WOODBURY  
 CHECK: DRAFTING A. BALANEVSKIY  
 CHECK: DESIGN B. CARLSON  
 JOB MANAGER: DESIGN SUPERVISOR

FILE NAME: 576040\_rpt.dwg - General Plans and Profiles.dwg  
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 USER: 2:34:08 PM

AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES	PIN 576040
BRIDGES 5522000 5522010	CULVERTS NONE
COUNTY: NIAGARA	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERAL PLAN- PRECAST CONCRETE ARCH	CONTRACT NUMBER
	DRAWING NO. A-10
	SHEET NO. 4

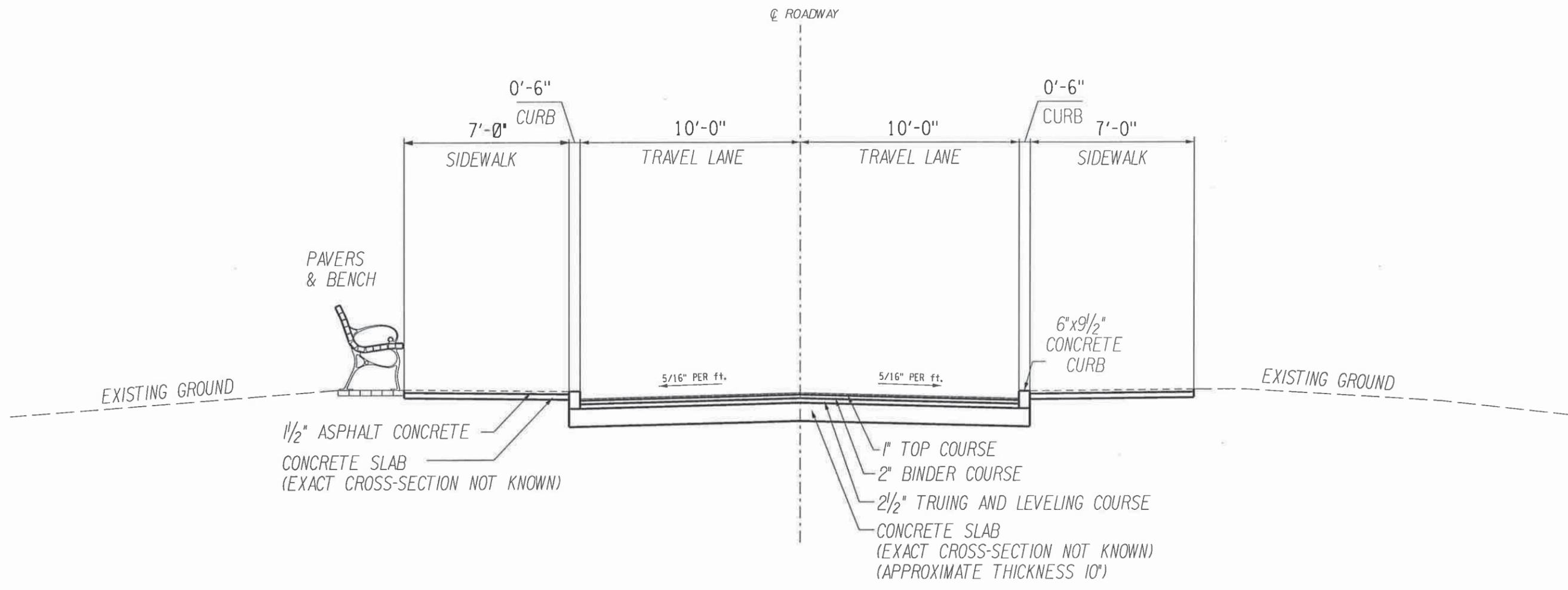
**GPI** GREENMAN-PEDERSEN, INC.  
 ENGINEERING & CONSTRUCTION SERVICES  
 BUFFALO, NEW YORK 14225

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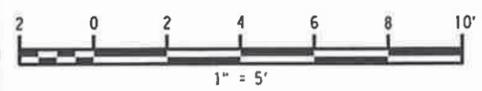
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 USER =

PROJECT MANAGER T. WOODBURY  
 CHECK  
 DRAFTING A. BALANEVSKIY  
 CHECK  
 DESIGN B. CARLSON  
 JOB MANAGER  
 DESIGN SUPERVISOR



TYPICAL ROADWAY SECTION  
 (GREEN ISLAND)



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS  
 DESCRIPTION OF ALTERATIONS:

AMERICAN FALLS BRIDGES
COUNTY: NIAGARA

PIN 576040

BRIDGES  
 5522000  
 5522010

CULVERTS  
 NONE

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
EXISTING ROADWAY SECTION	
DRAWING NO. A-4	
SHEET NO. 2	

**GPI** GREENMAN-PEDERSEN, INC.  
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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
 DOCUMENT NAME: DESIGN REPORT

PROJECT MANAGER T. WOODBURY

CHECK

DRAFTING A. BALANEVSKIY

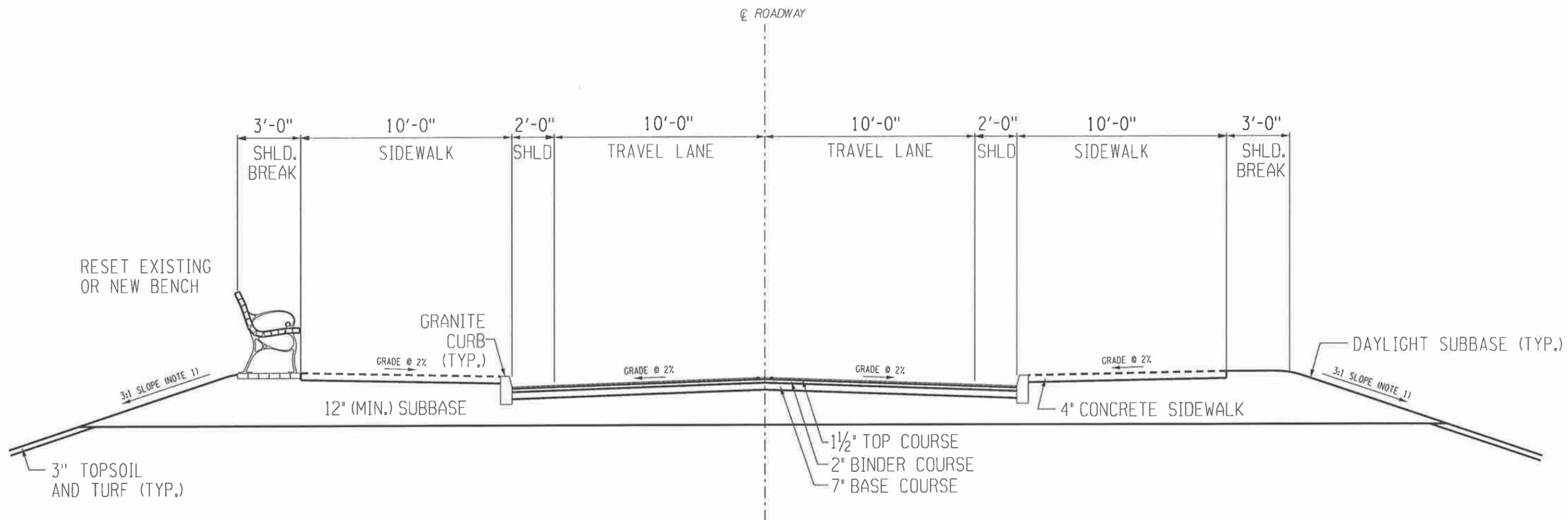
CHECK

DESIGN B. CARLSON

JOB MANAGER

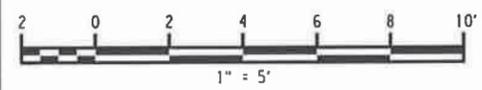
DESIGN SUPERVISOR

FILE NAME = 576040\_rpt.dwg - Typical Section.dwg  
DATE/TIME = 2/5/2015  
USER = 665041 AM



TYPICAL ROADWAY SECTION  
(GREEN ISLAND)

NOTES:  
1. SIDE SLOPES ON THE GREEN ISLAND APPROACH TO THE MAINLAND BRIDGE MAY BE STEEPER ON THE EXISTING ALIGNMENT OPTIONS TO KEEP THE TOE OF SLOPE ON THE ISLAND PENINSULA



AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	AMERICAN FALLS BRIDGES	PIN 576040	BRIDGES 5522000 5522010	CULVERTS NONE	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					TYPICAL SECTION ROADWAY	DRAWING NO. A-14 SHEET NO. 1
	COUNTY: NIAGARA					

**GPI** GREENMAN-PEDERSEN, INC.  
ENGINEERING & CONSTRUCTION SERVICES  
BUFFALO, NEW YORK 14225

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NEW YORK STATE DEPARTMENT OF TRANSPORTATION REGION 5  
DOCUMENT NAME: DESIGN REPORT

# APPENDIX C.

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## Traffic Information

Pedestrian Generator Checklist

## NYS DOT Pedestrian Generator Checklist

<b>PEDESTRIAN GENERATOR CHECKLIST</b>		
PIN: 5760.40	Project Name: Rehabilitation/Replacement of American Falls Bridges	
	Location: Niagara Falls State Park, City of Niagara Falls, Niagara County	
<p><i>Note: The term "generator" in this document refers to both pedestrian generators (where pedestrians originate) and destinations (where pedestrians travel to). A check of "yes" indicates a potential need to accommodate pedestrians and coordination with the Regional Bicycle and Pedestrian Coordinator is necessary during project scoping. Answers to the following questions should be checked with the local municipality to ensure accuracy.</i></p>		
<b>1.</b>	Is there an existing or planned sidewalk, trail, or pedestrian-crossing facility?	<b>YES X NO</b> <input type="checkbox"/>
<b>2.</b>	Are there bus stops, transit stations or depots/terminals located in or within 800 m of the project area?	<b>YES X NO</b> <input type="checkbox"/>
<b>3.</b>	Is there more than occasional pedestrian activity? Evidence of pedestrian activity may include a worn path.	<b>YES X NO</b> <input type="checkbox"/>
<b>4.</b>	Are there existing or approved plans for generators of pedestrian activity in or within 800m of the project that promote or have the potential to promote pedestrian traffic in the project area, such as schools, parks, playgrounds, places of employment, places of worship, post offices, municipal buildings, restaurants, shopping centers, or other commercial areas, or shared-use paths?	<b>YES X NO</b> <input type="checkbox"/>
<b>5.</b>	Are there existing or approved plans for seasonal generators of pedestrian activity in or within 800 m of the project that promote or have the potential to promote pedestrian traffic in the project area, such as ski resorts, state parks, camps, amusement parks?	<b>YES X NO</b> <input type="checkbox"/>
<b>6.</b>	Is the project located in a residential area within 800 m of existing or planned pedestrian generators such as those listed in 4 above?	<b>YES</b> <input type="checkbox"/> <b>NO X</b>
<b>7.</b>	From record plans, were pedestrian facilities removed during a previous highway reconstruction project?	<b>YES</b> <input type="checkbox"/> <b>NO X</b>
<b>8.</b>	Did a study of secondary impacts indicate that the project promotes or is likely to promote commercial and/or residential development within the intended life cycle of the project?	<b>YES</b> <input type="checkbox"/> <b>NO X</b>
<b>9.</b>	Does the community's comprehensive plan call for development of pedestrian facilities in the area?	<b>YES X NO</b> <input type="checkbox"/>
<b>10.</b>	Based on the ability of students to walk and bicycle to school, would the project benefit from engineering measures under the Safe-Routes-To-School program? Eligible infrastructure-related improvements must be within a 3.2 km radius of the project.	<b>YES</b> <input type="checkbox"/> <b>NO X</b>
<p><i>Note: This checklist should be revisited due to a project delay or if site conditions or local planning changes during the project development process.</i></p> <p>Comments: The project entails of rehabilitating or replacing the existing multi-modal (primarily Pedestrians) American Falls Bridges connecting the USA mainland to Green Island and ultimately to Goat Island and is situated in the Niagara Falls State Park in the City of Niagara Falls, NY in Niagara County.</p> <p>Regional Bicycle and Pedestrian Coordinator:</p> <p>Project Designer:</p>		

Below is an actual pedestrian count taken in '09 (Labor Day) and a photo taken '10 (Memorial Day) which was used to also estimate the usage.

Actual pedestrian count @ pedestrian bridge (09/05/2009 @ 14:00hrs)

To Goat Island: 1626/hr

To Mainland: 722/hr

Total: 2,348/hr

Photos taken May 29 2010 Aprox 13:00 hrs.

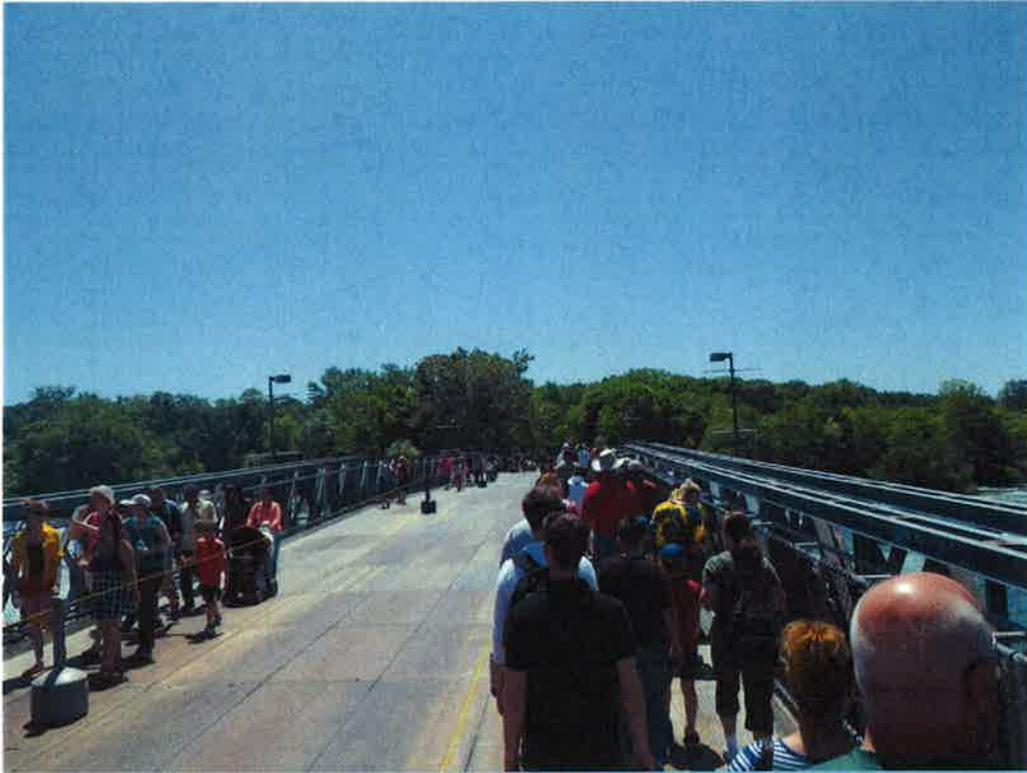
(Estimate 45 pedestrians to Mainland and 80 Pedestrians to GI)

Assuming 3min to cross bridge (during peak holiday period):

1600/hr to Mainland

900/hr to Goat Island

Total: 2,500/hr



# APPENDIX D.

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## Structures Information

Load Rating Viability BINs 5522000 and 5522010

August 6, 2014

## **Load Rating Viability BINs 5522000 and 5522010**

### **SUMMARY**

GPI has received and reviewed the *American Falls Bridges NYSDOT Contract No. D031136 Viability of Load Rating Mainland to Green Island Bridge BIN 5522000* from Ravi Engineering and Land Surveying, P.C. (Ravi) and *American Falls Bridges NYSDOT Contract No. D031136 Viability of Load Rating Green Island to Goat Island Bridge BIN 5522010* from Delta Engineers, Architects, & Land Surveyors, P.C. (Delta). Reports from each of these firms are attached, along with GPI's instructions and list of background information sent to each firm.

Both firms reviewed the information provided.

### **Concrete Strength**

Both reports indicate that a representative concrete strength cannot be reliably determined from the existing cores. The Ravi report provides some detail on the existing concrete. Delta states that additional cores would be needed to determine representative concrete strength.

Ravi's Report states: "*As part of a previous evaluation, six concrete core samples were taken from BIN 5522000 in October 2003. The cores were described as having a porous and pitted appearance with many small voids and honeycomb, which would indicate a harsh mix with a lack of sand and fine aggregate. Other areas appeared to be oversanded lacking adequate course aggregate. The entire length of one core sample was in such poor condition that a compression test could not be performed. Portions of other cores were described as porous, weathered, and deteriorated, but there were sufficient lengths of intact concrete to perform compression tests. Five tested portions of the core samples indicated strengths in the range of 1490 psi to 3740 psi, but these strengths may not be representative of the entire length of the cores. The arches were poured in multiple longitudinal sections with construction joints, so conditions are liable to vary between different pours. Freeze/thaw effects would also contribute to different rates of deterioration depending on moisture infiltration and exposure. Given the*

*extent of deterioration and numerous uncertainties, it would not be practical to determine a representative concrete strength for analysis purposes.”*

*Delta’s Report states: “Three concrete cores were obtained at the Green Island to Goat Island Bridge, one in each span (core numbers 8, 9 and 10). Core number 8 concrete was weathered and porous, compressive strength of 2,660 psi. Core number 9 concrete was weathered, compressive strength of 3,540 psi. Core number 10 concrete was slightly weathered to sound, compressive strength of 2,930 psi...In 2003, the concrete was in fair condition...There has been a great deal of water infiltration into the existing concrete arches as is evidenced by the poor condition of the gunite on the underside of the arches...Current concrete condition is unknown. Concrete cores would need to be taken in order to determine the current compressive strength of the arch concrete and to determine its quality. If the reliability of concrete confinement of the reinforcement is questionable, then this bridge may not be ratable even if other required information is obtained.”*

## **Reinforcing Steel**

Both reports touch on the history of reinforced concrete construction and on the unique reinforcing in these arches and difficulty in modeling. Delta states that destructive testing may be required to determine the bar properties.

*Ravi’s Report states: “For modeling purposes, special consideration would need to be given to the interaction and horizontal shear between the steel and concrete. The plates should not necessarily be modeled as an equivalent area of conventional deformed bar reinforcement. Considering the poor concrete material conditions, this unique reinforcement type would be particularly difficult to model reliably.”*

*Delta’s Report states: “The size of the steel reinforcing ‘ribs’ is shown on the 1934 rehab plans, but the presence and condition of the ribs needs to be verified. The size and spacing of the steel reinforcing flat bars would need to be measured utilizing destructive or nondestructive testing methods (e.g. eddy-current, ground penetrating radar magnetic-reluctance) which would be very difficult to obtain. The size of the bars at both the intrados and the extrados should be confirmed. Because the condition of the reinforcement is unknown, some concrete removals would be required in deteriorated areas of the intrados to determine if section losses are significant.”*

## **Conclusions**

After reviewing the historic documentation and previous studies on the bridges both Ravi and Delta recommend NOT performing a load rating on the bridges.

# **GPI** Greenman - Pedersen, Inc.

## **Engineering and Construction Services**

4950 Genesee Street, Suite 100

Buffalo, New York 14225

Phone: 716 633-4844

Fax No: 716 633-4940

Ravi's Report states: "*...there are too many unknown variables to accurately and reliably model the existing structure. We do not recommend performing a load rating for BIN 5522000.*"

Delta's Report states: "*There is not enough record information to reliably load rate the Green Island to Goat Island Bridge (5522010) in its current condition...*"

As noted in this summary, and in the documentation provided by Ravi and Delta, the poor condition of the concrete and the limited distribution and unknown condition of the reinforcement are the main reasons for recommending against a load rating of the bridges.

GPI therefore recommends that a load rating NOT be performed for either bridge.

**AMERICAN FALLS BRIDGES**  
**NYSDOT CONTRACT NO. D031136**  
**VIABILITY OF LOAD RATING MAINLAND TO GREEN ISLAND BRIDGE**  
**BIN 5522000**

**Prepared for:**  
Greenman-Pederson, Inc.  
4950 Genesee Street, Suite 100  
Buffalo, NY 14225

**Prepared by:**  
Ravi Engineering & Land Surveying, P.C.  
574 Main Street, Suite 205  
East Aurora, New York 14052



7/15/2014

AMERICAN FALLS BRIDGES

NYSDOT CONTRACT NO. D031136

VIABILITY OF LOAD RATING MAINLAND TO GREEN ISLAND BRIDGE

BIN 5522000

7/15/2014

Ravi Engineering & L.S., P.C. has carefully reviewed the available record plans, inspection reports, previous studies, and other historical records to assess the viability of performing a load rating for BIN 5522000 (Mainland to Green Island Bridge). A complete listing of materials reviewed is included at the end of this report.

Two basic parameters necessary for any load rating analysis are geometric data and material properties. The 1934 plans of the 1901 structures show the arch span, rise, and thicknesses near the springline, quarter-points, and midspan, but the exact curvature of the arch is not defined.<sup>1</sup> Inspection findings are generally consistent with the record plans, but no precise field-verification measurements are available. A graphical fit of the record plan data, with limited field-verification of principle dimensions, should provide sufficient geometric data for load rating purposes. However, there is considerable uncertainty regarding the existing material properties.

The concrete is 113 years old and is generally in poor condition. Repairs in 1969 coated the underside of the arch with gunite.<sup>2</sup> This appears to have retained moisture within the structure and contributed to deterioration of the original concrete. Construction photos taken during the 1969 repairs show significant voids and exposed reinforcing steel, particularly in the longer center span.<sup>3</sup> Biennial and interim bridge inspections have documented increasing deterioration over the past 12 years, as a large area of the gunite coating delaminated and fell off in Span 2. This revealed voids up to 2' deep in the original concrete. However, most of the underside of the structure is still concealed behind the delaminated gunite coating.<sup>4</sup>

As part of a previous evaluation, six concrete core samples were taken from BIN 5522000 in October 2003. The cores were described as having "a porous and pitted appearance with many small voids and honeycomb, which would indicate a harsh mix with a lack of sand and fine aggregate. Other areas appeared to be oversanded lacking adequate course aggregate." The entire length of one core sample was in such poor condition that a compression test could not be performed. Portions of other cores were described as porous, weathered, and deteriorated, but there were sufficient lengths of intact concrete to perform compression tests. Five tested portions of the core samples indicated strengths in the range of 1490 psi to 3740 psi<sup>5</sup>, but these strengths may not be representative of the entire length of the cores. The arches were poured in multiple longitudinal sections with construction joints, so conditions are liable to vary between different pours.<sup>6</sup> Freeze/thaw effects would also contribute to different rates of

## VIABILITY OF LOAD RATING BIN 5522000 (PAGE 2 of 3)

deterioration depending on moisture infiltration and exposure. Portions of the concrete near the top and bottom surfaces of the arch, where the steel reinforcement is located, would be most vulnerable to freeze/thaw damage over time. Given the extent of deterioration and numerous uncertainties, it would not be practical to determine a representative concrete strength for analysis purposes.

At the time that this bridge was constructed in 1901, reinforced concrete technology was in its infancy. The primary reinforcement consists of 6" wide steel plates spaced at 3' centers.<sup>1</sup> Rivets and bolts were placed through the plates to mechanically anchor the plate to the concrete. The bridge designer, Edwin Thatcher, patented a similar reinforcing bar in 1899.<sup>7</sup> Based on AASHTO year-built criteria, a yield strength of 26,000 psi could be used for analysis.<sup>8</sup> However, the reinforcement configuration is quite unconventional by modern standards. For modeling purposes, special consideration would need to be given to the interaction and horizontal shear between the steel and concrete. The plates should not necessarily be modeled as an equivalent area of conventional deformed bar reinforcement. Also, considering the poor concrete material conditions, the bond between the concrete and steel reinforcement may not be reliable.

Portions of 4 reinforcing plates are exposed in Span 2. These plates exhibit moderate surface rust, but generally appear to be intact. Most of the reinforcing plates are concealed by the gunite and conditions are unknown. A Special Inspection performed in March 2013 identified several locations where the exposed reinforcing plates appeared to sag slightly.<sup>4</sup> This may have been an as-built condition or it may be indicative of debonding or distress at the interface between the concrete and steel.

Based on the rationale presented above, there are too many unknown variables to accurately and reliably model the existing structure. We do not recommend performing a load rating for BIN 5522000 (Mainland to Green Island Bridge).

### References

- <sup>1</sup> Plans for Green Island to Mainland Bridge, February 24, 1934, Sheet 2
- <sup>2</sup> Plans for Reconstruction of the Substructures of the Goat Island Bridges, *State of New York Department of Conservation Division of Parks and Outdoor Recreation*, April 28, 1969, Sheet 4
- <sup>3</sup> Photos of the Reconstruction of the Substructures of the Goat Island Bridges (D0036699), 1969, Pages 10-15
- <sup>4</sup> Special Inspection of BIN 5522000, March 1, 2013
- <sup>5</sup> Evaluation of Goat Island Bridges, *Erdmann Anthony*, March 2004, Pages 6, 7, and Appendix A
- <sup>6</sup> *The Engineering Record*, Vol. 42, No. 7, February 16, 1901
- <sup>7</sup> Memoir of Edwin Thacher, Page 919
- <sup>8</sup> AASHTO, Manual for Bridge Evaluation, Second Edition. Table 6A.6.2.2-1

Documents Reviewed:

- Contracts and Specifications, *W. H. Keepers & Co.*, June 23, 1900
- *The Engineering Record*, Vol. 42, No. 7, February 16, 1901
- *Scientific American*, October 23, 1901
- Thacher Arch Bridge at Goat Island, Niagara Falls, NY, Figure 143, *A. W. Buell*, 1904
- Memoir of Edwin Thacher, *Transactions of the American Society of Civil Engineers*, Vol. 84, 1921
- Plans for Green Island to Mainland Bridge, February 24, 1934
- Plans for Reconstruction of Decks, Walks and Balustrades on Old Goat Island Bridges, *State of New York Department of Conservation - Division of Parks*, June 23, 1965
- Plans for Reconstruction of the Substructures of the Goat Island Bridges, *State of New York Department of Conservation Division of Parks and Outdoor Recreation*, April 28, 1969
- Photos of the Reconstruction of the Substructures of the Goat Island Bridges (D0036699), 1969
- Plans for Utility Installations, *State of New York Executive Department – Office of Parks and Recreation*, September 1975
- Evaluation of Goat Island Bridges, *Erdmann Anthony*, March 2004
- Goat Island Bridges Rehabilitation, *Cannon Design / FRA Engineering*, August 16, 2005
- Structure Alternative Feasibility Study, *Bergmann Associates/ LP Ciminelli*, December, 2008
- Scoping Report, *NYS DOT*, October, 2013
- “General Discussion of Design and Construction of Concrete Arch Bridges,” *Engineering News*, Vol. 44, *Edwin Thacher*, 1899
- Preservation and Enhancement of the American Falls, *American Falls International Board*, December, 1971
- Construction Access Feasibility Study for the Replacement of the Goat Island Bridges, *Bergmann Associates/L P Ciminelli*, October, 2008
- Biennial and Interim Bridge Inspection Reports for BIN 5522000, dated 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2010, 2012, 2013
- Special Inspection of BIN 5522000, March 1, 2013

May 13, 2014

Mr. Ronald Centola, PE  
Ravi Engineering & Land Surveying, PC  
2110 S. Clinton Ave., Suite 1  
Rochester, NY 14618

Re: American Falls Bridges  
NYSDOT Contract D031136  
Task 7120 Evaluation of Load Rating Viability

Dear Mr. Centola:

We recently requested Ravi's schedule to perform work under Task 7120. Task 7120 states that you will be supplied information in order to perform your work under the task.

We have now provided you:

1. Biennial Inspection Reports (via slingshot transmittal May 12, 2014 of [Project Scoping Report June 2013.pdf](#));
2. BIN Folder information (via slingshot transmittal May 11, 2014 of [Goat Island Drawings.zip](#)); and
3. Previous Studies (via this transmittal letter and enclosed CD entitled American Falls Bridges Previous Bridge-Related Studies).

We have also provided you:

- A. [1969 Photos – Reconstruction of the Substructures of the Goat Island Bridges D366999.pdf](#) (via e-mail, May 13, 2013);
- B. [Structural Study of Reinforced Concrete Arch Bridges.pdf](#) (via e-mail, May 6, 2014);
- C. [Building Centers on Stone Arch Bridge Green Island to Goat Island 1900.pdf](#) (via e-mail, May 6, 2014);
- D. [Engineering News Vol 44 – Conc Bridge at Goat Island.docx](#) (via e-mail, May 6, 2014);
- E. [Engineering Record Vol 43 – Conc Bridge at Goat Island Feb 16 1901.pdf](#) (via e-mail, May 6, 2014);
- F. [Fig 143 Reinforced Concrete A W Buell 1904.pdf](#) (via e-mail, May 6, 2014);
- G. [Contract & Specifications Goat Island Bridges 1900-1901.pdf](#) (via e-mail, May 9 2014);
- H. [scientific-american-v85-n21-1901-1-23.pdf](#) (via slingshot May 5, 2014); and
- I. A summary of information (Item 2 in e-mail message, May 5, 2014).

We have supplied copies of the above to Delta Engineers. We look forward to seeing the results of your work and Delta's work under Task 7120.

Very truly yours,



Timothy R. Woodbury, PE

Enclosure

AMERICAN FALLS BRIDGES  
NYS DOT CONTRACT NO. D031136  
VIABILITY OF LOAD RATING GREEN ISLAND TO GOAT ISLAND  
BRIDGE  
BIN 5522010

**Prepared for:**  
Greenman-Pedersen, Inc.  
4950 Genesee Street, Suite 100  
Buffalo, NY 14225

**Prepared by:**  
Delta Engineers, Architects, and Land Surveyors, P.C.  
860 Hooper Road  
Endwell, NY 13760



7/15/2014

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**EXECUTIVE SUMMARY**  
**AMERICAN FALLS BRIDGES**  
**NYSDOT CONTRACT NO. D031136**  
**VIABILITY OF LOAD RATING GREEN ISLAND TO GOAT ISLAND BRIDGE**  
**BIN 5522010**  
**6/10/2014 (rev. 7/15/2014)**

Delta Engineers, Architects, & Land Surveyors, P.C. has thoroughly reviewed available record information, including inspection reports, historic documents and other studies to assess the viability of performing a Level 1 Load Rating of the subject structure. Based on our evaluation, we have determined that a load rating of this structure in its current condition is not feasible due to several factors; these factors are described below and in combination depict uncertainty in member geometry, condition and reliability. The attached outline describes in greater detail the documents reviewed and evaluations made to support this conclusion.

Geometry: The forces on the structure are dependent on the size and shape of the arch barrels. Although plans of the structure exist, they were developed in 1934, decades after completion of the structure. These drawings provide a graphical depiction of the arch and limited dimensions that do not adequately establish the form of the arch intrados and extrados without field verification.

Concrete condition: Three concrete cores were extracted from the arch barrels over 10 years ago. Condition of these few cores was fair. The underside of the arch is covered with a gunite coating of unknown depth. This coating is in poor condition and is hollow, cracked and damp with efflorescence. These few cores do not provide a sufficient representation of the existing concrete condition and additional freeze-thaw damage has likely occurred since they were extracted.

Concrete reinforcement: Flat bars are shown on the 1934 plans, but its size, spacing or condition hasn't been verified in the field. The quality of bond and confinement of this reinforcement is presumed to be adequate; however, the concrete condition at the level of reinforcement isn't sufficiently documented to be certain.

We've concluded that the information necessary to perform a Level 1 load rating of this structure is not present in sufficient detail to provide a reliable result. Significant effort would be required to obtain the additional data required to load rate the structure. Also, if the concrete condition was found to be so poor at the level of bar reinforcement that confinement and bond is unreliable, then the structure may be determined to be not ratable. Before additional data collection is considered, we recommend first that the feasibility of bridge rehabilitation be examined (without regard to load capacity); prior studies have concluded that rehabilitation isn't a viable alternative and if this conclusion is upheld, there would be no need to perform a load rating.

## OUTLINE

## VIABILITY OF LOAD RATING GREEN ISLAND TO GOAT ISLAND BRIDGE

## BIN 5522010

- I. List of documents thoroughly reviewed with reviewer notes:
  - a. 1900 Contracts and Specifications (State Reservation at Niagara), 6/23/1900
    - i. Contract for construction of Goat Island bridges between W. H. Keepers and Company and the People of New York by the Commissioners of the State Reservation at Niagara.
    - ii. Specifications listed include modulus of elasticity for concrete and steel, and allowable values for steel tensile stress, concrete compressive stress, concrete shear and concrete tension.
    - iii. Makes mention of steel ribs: two steel flat bars, one at the intrados and one at the extrados, of size and spacing shown on plans. At the longitudinal center of each bar rivets driven at 8" c/c with heads projecting 7/8" from the face of the bars. Size of rivets not given.
    - iv. Document contains copy of Supplementary Agreement dated March, 1901 which revises various specifications and the completion date. One of the revisions changed the cover to the flat bars from 2" to 3" at the intrados and the extrados.
  - b. The Engineering Record, Vol. 42, No. 7, 2/16/1901
    - i. Description of Goat Island bridges: earth filled concrete arches with steel ribs that resist bending.
    - ii. Bar size is given as 6"x3/4" in the end spans and 6"x13/16" in the center span of the Mainline to Green Island Bridge – the reinforcement for the Green Island to Goat Island Bridge isn't given. Mentions a row of rivets driven in at the center line of each bar so that their special heads shall key into the concrete. Bars separated by 3/4" bolts made from "extra soft steel" (likely threaded rods, not bolts), spacing is approximately 32" o.c.
  - c. Scientific American, 10/23/1901
    - i. Construction of Goat Island bridges commenced in 1900, but could not be completed in 1900 due to weather.
    - ii. Flat bars at intrados and extrados separated by bolts (likely threaded rods, not bolts) at 2' c/c, bars spaced at 3' transversely.
    - iii. The arches were partitioned off longitudinally 9 1/2 feet in width, four per span.
  - d. Figure 143 'Thacher Arch Bridge at Goat Island, Niagara Falls, N.Y.', A. W. Buell, 1904:

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- i. Assumed to be Mainland to Green Island Bridge based on the span lengths shown.
  - ii. 6"x3/4" steel bars shown on elevation view.
- e. Memoir of Edwin Thacher and description reinforcing bars patented by Thacher, date unknown.
  - i. Memoir mentions association of Edwin Thacher with W. H. Keepers (the contractor for the Green Island to Goat Island Bridge). Also states Thacher was a pioneer in the design and construction of concrete steel bridges in the United States
- f. 1934 rehabilitation drawings (one drawing of Green Island to Goat Island Bridge and one of Mainland to Green Island Bridge)
  - i. Drawing of Green Island to Goat Island Bridge shows 4"x1/2" steel bars, 3" cover at intrados and extrados, spacing 36" transversely. Drawing also shows spring line, arch rise and arch thicknesses. Drawing does not describe arch geometry.
- g. 1965 rehabilitation plans (State of New York Department of Conservation - Division of Parks Plans)
  - i. Various topside bridge elements replaced/repared.
- h. 1969 rehabilitation plans (State of New York Department of Conservation – Division of Parks and Outdoor Recreation Plans)
  - i. Gunitite applied to underside of arches, all spans, both bridges. Prior to gunitite, anchors installed and welded wire mesh attached to anchors.
  - ii. Where footing scour present, new concrete placed, bottom of new concrete 6" below bedrock. See 4.d.
- i. 1975 utility installations: added telephone water and sewer.
- j. Evaluation of Goat Island Bridges by Erdmann/Anthony, March 2004
  - i. Page 4: photo at underside of Mainland to Green Island Bridge shows exposed steel rib, noted in text as 'heavily rusted'.
  - ii. Gunitite coating on the underside of the arches is cracked, damp with efflorescence and sagging.
  - iii. Three concrete cores were obtained at the Green Island to Goat Island Bridge, one in each span (core numbers 8, 9 and 10). Core number 8 concrete was weathered and porous, compressive strength of 2,660 psi. Core number 9 concrete was weathered, compressive strength of 3,540 psi. Core number 10 concrete was slightly weathered to sound, compressive strength of 2,930 psi.
  - iv. Report conclusion: Benefits of remediation are minimal. Remediation may cause problems to structural integrity (report did not state why).
- k. Goat Island Bridges Rehabilitation by Cannon Design.FRA Engineering, 8/16/05
  - i. Substructures founded on dolostone bedrock.

- ii. Recommended replacement of both bridges.
- l. Structure Alternative Feasibility Study, Bergmann Associates/L P Ciminelli, 12/08
  - i. Section 3c: many voids under all substructure units.
- m. Scoping Report, NYSDOT, 10/13
  - i. Section 2.3.3.5, Geotechnical: allowable foundation pressure 12.5 tons/square foot, 0.7 coefficient of sliding friction; in 2013, piles and concrete pile caps installed at piers to support Mabey bridges (Mainland to Green Island Bridge only).
  - ii. Appendix D, NYSDOT Bridge Inspection report, 10/7/12
    - 1. Arches for BIN 5522010 rated 4. Longitudinal cracks at 1/3 points on underside somewhat corresponding to original cold joint locations.
    - 2. Guniting at underside of arches damp and stained. Edges of guniting patches debonded, with ¼" gaps at midspan. Hollow sounding 10 to 30 % of total area.
- 2. List of additional documents receiving a cursory review:
  - a. Engineering News, by Edwin Thacher, 1899: general discussion of design and construction of concrete arch bridges.
  - b. Photo, date unknown, 'Bridge to Goat Island'.
  - c. Photo, 1900, 'Building Centers for Stone Arch Bridge, Green Island to Goat Island'.
  - d. Photos, 'Reconstruction of the Substructures of the Goat Island Bridges', 1969.
  - e. Preservation and Enhancement of the American Falls, by the American Falls International Board, 12/71.
  - f. Construction Access Feasibility Study for the Replacement of the Goat Island Bridges, by Bergmann Associates/L P Ciminelli, 10/08.
  - g. Botanical Evaluation of the Goat Island Complex, Niagara Falls, New York, Origins of the Flora, by Buffalo Museum of Science, dated unknown.
  - h. Niagara Falls State Park Landscape Improvements Plan by NYSOP, Recreation and Historic Preservation, 4/18/12.
- 3. Other observations:
  - a. In 2003, the concrete was in fair condition as noted in 1.j. There has been a great deal of water infiltration into the existing concrete arches as is evidenced by the poor condition of the guniting on the underside of the arches.
  - b. The arch concrete was poured in four sections longitudinally. There is no mention of shear keys between the four sections.
  - c. Re: 1.h: Review of 2008 report (see 1.i) indicates the footing scour repair indicated on the 1969 plans was either not performed or only marginally successful.

#### 4. Conclusions:

- a. There is not enough record information to reliably load rate the Green Island to Goat Island Bridge in its current condition due to these factors:
  - i. Current concrete condition is unknown.
  - ii. The 1934 drawing shows arch thicknesses at five locations along the arches, but the arch geometry is only graphically depicted; no dimensions were found to describe the arch shape.
  - iii. The size of the steel reinforcing 'ribs' is shown on the 1934 rehab plans, but the presence and condition of the ribs needs to be verified.
- b. In order to perform a load rating of the bridges current condition, these steps would be required:
  - i. Concrete cores would need to be taken in order to determine the current compressive strength of the arch concrete and to determine its quality. If the reliability of concrete confinement and/or bond of the reinforcement is questionable, then this bridge may not be ratable even if other required information is obtained.
  - ii. Assuming concrete quality is confirmed, field measurements via manual methods, ground survey and/or LIDAR scan would be required for arch geometry. The thicknesses of arches would also need to be determined, possibly by ground probes along with a ground survey of the top of the bridge and the arch intrados.
  - iii. The size and spacing of the steel reinforcing flat bars would need to be measured utilizing destructive or nondestructive testing methods (e.g. eddy-current, ground penetrating radar, magnetic-reluctance) which would be very difficult to obtain. The size of the bars at both the intrados and the extrados should be confirmed. Because the condition of the reinforcement is unknown, some concrete removals would be required in deteriorated areas of the intrados to determine if section losses are significant.

May 13, 2014

Mr. David L. Kennicutt, PE  
860 Hooper Road  
Endwell, NY 13760

Re: American Falls Bridges  
NYSDOT Contract D031136  
Task 7120 Evaluation of Load Rating Viability

Dear Mr. Kennicutt:

Task 7120 states that you will be supplied information in order to perform your work under the task.

We have now provided you:

1. Biennial Inspection Reports (via slingshot transmittal May 12, 2014 of [Project Scoping Report June 2013.pdf](#));
2. BIN Folder information (via slingshot transmittal May 11, 2014 of [Goat Island Drawings.zip](#)); and
3. Previous Studies (via this transmittal letter and enclosed CD entitled American Falls Bridges Previous Bridge-Related Studies).

We have also provided you:

- A. [1969 Photos – Reconstruction of the Substructures of the Goat Island Bridges D366999.pdf](#) (via slingshot, May 13, 2013);
- B. [Structural Study of Reinforced Concrete Arch Bridges.pdf](#) (via e-mail, May 6, 2014);
- C. [Building Centers on Stone Arch Bridge Green Island to Goat Island 1900.pdf](#) (via e-mail, May 6, 2014);
- D. [Engineering News Vol 44 – Conc Bridge at Goat Island.docx](#) (via e-mail, May 6, 2014);
- E. [Engineering Record Vol 43 – Conc Bridge at Goat Island Feb 16 1901.pdf](#) (via e-mail, May 6, 2014);
- F. [Fig 143 Reinforced Concrete A W Buell 1904.pdf](#) (via e-mail, May 6, 2014);
- G. [Contract & Specifications Goat Island Bridges 1900-1901.pdf](#) (via e-mail, May 9 2014);
- H. [scientific-american-v85-n21-1901-1-23.pdf](#) (via slingshot May 5, 2014); and
- I. A summary of information (Item 2 in e-mail message, May 5, 2014).

We have supplied copies of the above to Ravi Engineering and Land Surveying. We look forward to seeing the results of your work and Ravi's work under Task 7120.

Very truly yours,



Timothy R. Woodbury, PE

Enclosure

## APPENDIX E.

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# Public Involvement Plan and Input from Stakeholders Including Public

Public Involvement Plan

Public Input from September 23, 2014 Public Information Meeting

Tom Acara 9/24/14

Lewis Buttery Sept. 23, 2014

Bernadette Brennen Sept. 23, 2014

Tony James Sept. 23, 2014

Mary Sutter Sept. 23, 2014

Teresa Lasher Winslow Sept. 23, 2014

# APPENDIX E-1.

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## Public Involvement Plan

## **PUBLIC INVOLVEMENT PLAN**

**Name of Preparer:** Ron Centola, P.E., Ravi Engineering & Land Surveying, P.C.

**Date Updated:** 9/17/2014 (Original) , Revised 10/13/2015

**PIN:** 5760.40

**Route/Description:** Rehabilitation or Replacement of Bridges over American Rapids (Niagara River) to Goat Island, Niagara County.

**Municipality (s):** City of Niagara Falls, Niagara Falls State Park

**Current Phase** (check one)  Scoping  Phase I-IV  Phase V-VI  Construction  Other

### **Project Schedule as of Date Prepared:**

**IPP Approval:** Fall 2012

**Scoping Approval:** November 27, 2013

**Design Approval:**

Summer 2016

**PS&E:** TBD

**Construction Begins:** TBD

**Construction Completion:** TBD

Funding has not been identified for final design or construction. A schedule will be developed once funding is secured.

### **1. IPP update**

**List changes that have occurred since IPP:**

- Consultant team headed by GPI selected for design services

### **2. Project Data**

**Funding:** TBD

Fed-Aid NHS  Fed-Aid Non-NHS  100% State **(Assumed) Check Project**

**Type (s):**

NEPA:

NEPA Class I  NEPA Class II  NEPA Class III

SEQR:

SEQR Non-Type II  SEQR Type II

**Brief Description of Project Work:** Two concrete and masonry arches within Niagara Falls State Park provide multi-modal access over the American Rapids from the USA mainland to Green Island and ultimately to Goat Island. Deterioration led to the closure of the bridges in 2004 and span over them with a temporary (Mabey) truss structure. The original bridges remain below the temporary system and portions of the masonry and concrete continue to deteriorate and fall into the rapids. The temporary structure is intended to be temporary until a long term solution is developed. It is not consistent with the historic character of the area, restricts historic views of the rapids to park visitors, and is narrower than the original structures. The temporary structure also blocks access to all utilities serving Goat Island (utilities are carried in the original structure). Additionally, the configurations of the temporary truss structures prevent trolleys from crossing the bridges.

**NYSDOT person designated as community contact:** Craig Mozrall, P.E.

**Public Involvement prior to IPP (Y/N):** N **If yes, describe** N/A

**Relevant correspondence and/or meeting minutes attached? (Y/N):** N but available

- 8/6/13 Scoping Public Hearing Transcript
- 7/14/14 Meeting Minutes –internal Public Involvement coordination meeting with NYSDOT, GPI, and RAVI

### **3. Phase I-IV**

#### **PI Objectives during Preliminary Design:**

**Preliminary Design:** Identify feasible alternatives; determine potential environmental, tourism and economic impacts. Evaluate solutions to minimize impacts and maintain the historic presence of the existing structures. Identify appropriate funding sources. Continue public involvement activities.

#### **3.1 Information**

##### **List Internal Stakeholders:**

- Design
- Landscape/Environmental
- Construction
- Parks Environmental Management Bureau (EMB)

##### **List External Stakeholders:**

- US Army Corps of Engineers (Buffalo District)
- US Fish & Wildlife Service
- US Environmental Protection Agency
- International Joint Commission (Niagara Board of Control)
- National Marine Fisheries Service
- National Park Service
- Environment Canada
- Niagara County
- Ontario Ministry of Natural Resources
- Ontario Ministry of Environment
- International Niagara Board of Control
- Seneca Nation of Indians (SNI)
- Tuscarora Nation
- Federal Highway Administration
- NYS Department of Environmental Conservation
- NYS Historic Preservation Office (NYSOPRHP)
- NYS Department of State
- NYS Office of General Services
- US Department of State
- National Parks
- Canadian Department of Foreign Affairs
- NY Power Authority
- Ontario Hydro
- City of Niagara Falls, NY
- City of Niagara Falls, ON
- Empire State Development – USA Niagara
- Tonawanda Seneca Nation
- Seneca Cayuga Tribe of Oklahoma

#### **3.2 Communication Methods to be used:**

**Meetings with public officials:** Public hearing to also include public officials

**Public information meetings:** Public hearing to be January 2016

**Meeting formats:** Open format, with presentation

**Brochure:** Yes, 11x17" folded in color; brochure to include comment sheet.

**Visualizations:** Yes:

- PowerPoint
- Display boards

##### **Other public involvement techniques:**

**Direct mailings:** Public officials within the project vicinity will be notified through the mail.

## News releases:

**Internet:** Project information will be posted on:

[www.dot.ny.gov/americanfallsbridges](http://www.dot.ny.gov/americanfallsbridges) and  
<http://www.nysparks.com/inside-our-agency/public-documents.aspx>

**E-mail or telephone hot line:** Contact: Craig Mozrall  
Phone: (716) 847-3033  
E-mail address:  
[craig.mozrall@dot.state.ny.us](mailto:craig.mozrall@dot.state.ny.us)

### 3.3 Schedule for Public Involvement Activities (to be confirmed)

- Public Information Meeting #1 was held on September 23, 2014
- Public Hearing January 2016

## 4. Design V-VI

**PI Objectives during Design:** TBD

**Preliminary Design:** TBD

**Detailed Design:** Update stakeholders on progress, discuss changes.

### 4.1 Information

#### List Internal Stakeholders:

- Design
- Landscape/Environmental
- Construction

#### List External Stakeholders:

- US Army Corps of Engineers (Buffalo District)
- US Fish & Wildlife Service
- US Environmental Protection Agency
- International Joint Commission (Niagara Board of Control)
- National Marine Fisheries Service
- National Park Service
- Environment Canada
- Niagara County
- Ontario Ministry of Natural Resources
- Ontario Ministry of Environment
- International Niagara Board of Control
- Seneca Nation of Indians (SNI)
- Tuscarora Nation
- Federal Highway Administration
- NYS Department of Environmental Conservation
- NYS Historic Preservation Office (NYSOPRHP)
- NYS Department of State
- NYS Office of General Services
- US Department of State
- National Parks
- Canadian Department of Foreign Affairs
- NY Power Authority
- Ontario Hydro
- City of Niagara Falls, NY
- City of Niagara Falls, ON
- Empire State Development – USA Niagara
- Tonawanda Seneca Nation
- Seneca Cayuga Tribe of Oklahoma

#### **4.2 Communication Methods to be used:**

**Meetings with public officials:** As Required

**Public information meetings:** TBD

**Meeting formats:** Open format with presentation

**Brochure:** TBD

**Visualizations:** TBD

#### **Other public involvement techniques:**

**Direct mailings:** Public officials and appropriate stakeholders within the project vicinity will be notified through the mail.

#### **News releases:**

**Internet:** Project information will be posted on:

[www.dot.ny.gov/americanfallsbridges](http://www.dot.ny.gov/americanfallsbridges) and,

<http://www.nysparks.com/inside-our-agency/public-documents.aspx>

**E-mail or telephone hot line:** Contact: Craig Mozrall  
Phone: (716) 847-3033

E-mail address: [craig.mozrall@dot.state.ny.us](mailto:craig.mozrall@dot.state.ny.us)

#### **4.3 Schedule for Public Involvement Activities TBD**

### **5. Construction Phase**

#### **PI Objective During Construction:**

Inform and maintain contact with affected stakeholders concerning construction activity schedule and impacts.

#### **5.1 Issues requiring public outreach:**

**Maintenance and protection of traffic (MPT):** It is anticipated that during construction visitors will continue to visit the park and the project may limit or impact park access for these visitors. Additionally, the work area will be securely delineated throughout construction operations.

**5.2 Communication Methods to be used: Message signs:** During construction the visiting public will be notified in advance of changes to access through the use of variable message boards and the project website ([www.dot.ny.gov/americanfallsbridges](http://www.dot.ny.gov/americanfallsbridges)).

## APPENDIX E-2.

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### Public Input

**From:** Tom Acara [mailto:t.acara@niagarafalls-cc.com]

**Sent:** Wednesday, September 24, 2014 6:41 PM

**To:** Mozrall, Craig s. (DOT)

**Cc:** Peters, Ronald (PARKS)

**Subject:** Pedestrian Bridge

Greetings Craig & Ron:

Thank you for hosting the public input event last night. It was great to see the bridge is so important to so many people. I know it is to me both professionally and personally. The best perk of my job is I get to walk to Niagara Falls as often as possible. Professionally we are trying to change Niagara Falls from merely an attraction to a destination.

Ron, the work you guys have done far in the park has been excellent! The new lower walkway to Luna Island and for the first time this week, the walk from Prospect to the bridge has come out beautifully. After last night's meeting, I'm comfortable you understand the importance of this project. You guys have the opportunity to create something special generations after us will appreciate. I'm glad you are trying hard to get it right.

Let me leave you with the three key points I believe came out:

- First and foremost the bridge needs to be a pedestrian bridge. We don't mind sharing it with the trolley but taking care of the pedestrians should be TOP PRIORITY. By your admission last night, 400,000 ride the trolley so many more tourists are walking over the bridge. And that's in its current state. How many more will want to walk over something appealing and special? Please make our sidewalks wide and the site line beautiful for pictures.
- The bridge must be appealing. The bridge you build should be one everyone wants to take a picture of. In the summer it should have some sort of flower bed or hanging flowers. It should beckon everyone who sees it to want to cross it. We understand it must function under seasonal challenges and of course the rapids but please make it pretty.
- It should be close to the water so our tourists can feel the rapids. If there is some way to build it safe enough for someone to look over without falling, that would be amazing. I love the lookout you did on the lower trail to Luna Island. Something like that on the bridge? Perhaps near the tip of Green Island?

Gentlemen, I truly believe this project is one of the most important projects happening in Niagara Falls. The Canadian side of the Falls has been blessed by geography. They have a beautiful panoramic view. That combined with some decisions over here have people suggesting the Canadian side has more to offer. They don't have the ability to cross the rapids and enjoy a protected park like setting that allows our guests to experience the Falls more intimately. The bridge you are about to build will be the signature attraction that sets the American side apart. Please create something we can all be proud of.

If there is anything I can do to help please let me know. Thanks for your time and consideration.

Cordially,  
TOM ACARA  
Sales Manager

**Conference & Event Center Niagara Falls | Old Falls Street, USA |** Managed by Global Spectrum  
Phone: 716.278.2104 | Fax: 716.278.0008 | 101 Old Falls Street | Niagara Falls, New York 14303-1244  
<http://ccfnny.com/>





# PUBLIC INFORMATION MEETING

Sept. 23, 2014

## COMMENT SHEET



New York State  
Department of Transportation

The American Falls Bridges  
Niagara Falls State Park  
Niagara County, City of Niagara Falls  
PIN: 5760.40

We welcome your comments with respect to this project. Comments may be dropped off in the comment box at the meeting or mailed to the address printed on the back of this page.

**Please submit all comments by October 7, 2014**

NAME: LEWIS BUTTERY

ADDRESS: 136 AKROW ST LOCKPORT NY 14094

E-MAIL: LEWIS BUTTERY @ GMAIL.COM

716-434-5051

COMMENTS:

PLEASE REPAIR THIS BRIDGE

TOO MANY "OLD" THINGS ARE DISCARDED UNNECESSARILY

IF REPLACEMENT IS NECESSARY THE NEW ONE

SHOULD LOOK JUST LIKE THE ORIGINAL

BTW: THE 2ND BRIDGE (1818-1855) WAS BUILT

BY PARKHURST WHITNEY AND GAD PIERCE (MY ANCESTRAL UNCLE)

MY ANCESTRAL GRANDFATHER, ROBERT NICHOLS BUILT TERRAPIN TOWER

IN 1833

I OPPOSE ANY MODERN "LOOK"

IN 2018 I WANT TO BE FOOLED INTO THINKING

I AM LOOKING AT THE 1901 BRIDGE

PLEASE FOLD AS SHOWN ON THE BACK, TAPE AND MAIL



## PUBLIC INFORMATION MEETING

Sept. 23, 2014

### COMMENT SHEET



New York State  
Department of Transportation

**The American Falls Bridges  
Niagara Falls State Park  
Niagara County, City of Niagara Falls  
PIN: 5760.40**

We welcome your comments with respect to this project. Comments may be dropped off in the comment box at the meeting or mailed to the address printed on the back of this page.

**Please submit all comments by October 7, 2014**

NAME: Bernadette Brenne n

ADDRESS: 501 Third St, Niagara Falls, NY

E-MAIL: bmb@niagara.edu

COMMENTS:

1) Enhance tourism in the city by creating lanes for pedestrians, bikers, segways & possibly horse drawn carts to provide multiple opportunities for tourists to see the park + the city → Similar to Stanley Park in Vancouver, Canada — fabulous opportunity to rent bikes & ride around safely + enjoy the beauty of the area. → Ensure transport is connected to the city & drives tourists downtown once they've viewed the park so they don't just leave.

2) Plan linkages to parkway renovation project w/ potential connection to Lewiston for bike & Trolley traffic. Niagara Univ. students want to be able to bike to the falls & to Lewiston from the Univ & the Univ. now has bikes for loan to

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the students. P.S. Consider the amazing impact Also, include history + traditions along pedestrian bridge like St. Charles Bridge in



## PUBLIC INFORMATION MEETING

Sept. 23, 2014

### COMMENT SHEET



New York State  
Department of Transportation

The American Falls Bridges  
Niagara Falls State Park  
Niagara County, City of Niagara Falls  
PIN: 5760.40

We welcome your comments with respect to this project. Comments may be dropped off in the comment box at the meeting or mailed to the address printed on the back of this page.

**Please submit all comments by October 7, 2014**

NAME: TONY JAMES

ADDRESS: BUFFALO OLMSTED PARKS CONSERVANCY  
84 PARKSIDE AVE, BUFFALO, NY 14214

E-MAIL: tony@bfloparks.org

COMMENTS:

To "ensure that consistency with the historical context of the Frederick Law Olmsted prepared plan for the Niagara Reservation ... is maintained," it is critical that the repaired or rebuilt bridges maintain their historic appearance. I have two main concerns with design issues as presented: ① material choice, and ② bridge alignment. GPI presented the possibility of using a "concrete form liner to replicate" the existing stonework, instead of using the existing stone to truly replicate the original. The artificial stone look created by the concrete formwork in no way would match the historic look, and thus would not ensure the consistency which is one of the project's stated objectives. The same is true of the possibility of not rebuilding on the existing historic alignment. We certainly hope that the original stonework and historic alignment can be retained.

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## PUBLIC INFORMATION MEETING

Sept. 23, 2014

### COMMENT SHEET



New York State  
Department of Transportation

**The American Falls Bridges  
Niagara Falls State Park  
Niagara County, City of Niagara Falls  
PIN: 5760.40**

We welcome your comments with respect to this project. Comments may be dropped off in the comment box at the meeting or mailed to the address printed on the back of this page.

**Please submit all comments by October 7, 2014**

NAME: Mary Sutter

ADDRESS: 443 Memorial Parkway, Niagara Falls, NY 14303

E-MAIL: jojo.greeneyes@verizon.net

COMMENTS:

1. In listing to the presentation I have come to conclusion that this project is for marketing the park for faster delivery for tourists to get from one event to another. The more tourists the more money made in one day.

2. I have concerns regarding the impact of destruction for Green Island when demolition of the bridges commence.

3. Niagara Falls was noted for its natural wonders. Since the updated changes on the Islands to commercialize the parks. The naturalness has been altered, historical items have been removed, like natural stones with fossils, walkways, plant life and wild life.

4. In the meeting a bike path was suggested for the bridge. When riding a bike on the park now you must share the road not the trolley trail. I know it has been mentioned to me every time we ride on Goat Island by the park security.

5. I would like to see the new structure to remain as close to the old structures dimensions. We don't need to increase the construction so the bridge can handle a tractor trailer. Unless that is your intention in the future so you can pack more people on the island to make the State more money.

6. Will the bridges be installed as units, pre-assembled else where and brought to the island to prevent less damage to the surrounding areas?

7. Will the bridge be built with lighting to the underside to light up the rapids?

8. I am sorry for being negative, but Niagara Falls has much great history and every time contractors come up with a plan they take a little more of of historical place with it.

PLEASE FOLD AS SHOWN ON THE BACK, TAPE AND MAIL



## PUBLIC INFORMATION MEETING

Sept. 23, 2014

### COMMENT SHEET



New York State  
Department of Transportation

**The American Falls Bridges  
Niagara Falls State Park  
Niagara County, City of Niagara Falls  
PIN: 5760.40**

We welcome your comments with respect to this project. Comments may be dropped off in the comment box at the meeting or mailed to the address printed on the back of this page.

**Please submit all comments by October 7, 2014**

NAME: *Teresa Lasher Winslow*  
ADDRESS: *138 79th Street*  
*Niagara Falls, NY 14304*  
E-MAIL: *ThasherWinslow@juno.com*  
COMMENTS:

*The final design must mimick the 1901 design to match the Olmsted concept. Some preformed cast concrete does not look like real stone - must find a source that does look natural. I don't mind new build.*

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# APPENDIX F.

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Misc.

Smart Growth Screening Tool

Fascade Treatments

## APPENDIX F-1.

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### Smart Growth Screening Tool

PIN 5760.40

## Smart Growth Screening Tool (STEP 1)

**NYSDOT & Local Sponsors** –Fill out the Smart Growth Screening Tool until the directions indicate to STOP for the project type under consideration. For all other projects, complete answering the questions. For any questions, refer to Smart Growth Guidance document.

Title of Proposed Project:	The American Falls Bridges Replacemnt
Location of Project:	City of Niagara Falls, Niagara County
Brief Description:	Replacement/Rehabilitation of the American Falls Bridges

### A. Infrastructure:

(Addresses SG Law criterion a. - To advance projects for the use, maintenance or improvement of existing infrastructure)

1. Does this project use, maintain, or improve existing infrastructure?  
 Yes                       No                       N/A

**Explain:** (use this space to expand on your answers above – the form has no limitations on the length of your narrative)

The scope of this project is to rehabilitate or replace BINs 5522000 and 5522010, the American Falls Bridges connecting connecting the Mainland USA to Goat Island, via Green Island. The subject bridges are located within the Niagara Falls State Park in the City of Niagara Falls, Niagara County.

#### Maintenance Projects:

- a. Continue with screening tool for the four (4) types of maintenance projects listed below, as defined in **NYSDOT PDM Exhibit 7-1 and described in 7-4:**  
<https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm>
- Shoulder rehabilitation and/or repair;
  - Upgrade sign(s) and/or traffic signals;
  - Park & ride lot rehabilitation;
  - 1R projects that include single course surfacing (inlay or overlay), per Chapter 7 of the NYSDOT Highway Design Manual.

- b. For all other maintenance projects, STOP here. Attach this document to the programmatic Smart Growth Impact Statement and signed Attestation for Maintenance projects (located in Appendix 2, page 13 in Guidance document).

**B. Sustainability:**

NYSDOT defines Sustainability as follows: A sustainable society manages resources in a way that fulfills the community/social, economic and environmental needs of the present without compromising the needs and opportunities of future generations. A transportation system that supports a sustainable society is one that:

- Allows individual and societal transportation needs to be met in a manner consistent with human and ecosystem health and with equity within and between generations.
- Is safe, affordable, and accessible, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
- Protects and preserves the environment by limiting transportation emissions and wastes, minimizes the consumption of resources and enhances the existing environment as practicable.

For more information on the Department’s Sustainability strategy, refer to Appendix 1 of the Guidance and the NYSDOT web site. [www.dot.ny.gov/programs/greenlites/sustainability](http://www.dot.ny.gov/programs/greenlites/sustainability)

(Addresses SG Law criterion j : to promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain and implement.)

- 1. Will this project promote sustainability by strengthening existing communities?  
Yes  No  N/A
- 2. Will the project reduce greenhouse gas emissions?  
Yes  No  N/A

**Explain:** (use this space to expand on your answers above)

Currently, the Niagara Falls Park trolleys are using a longer detoured route over the American Rapids to access Goat Island. This route is approximately 2 miles longer than the original route using the American Rapids bridges to access Goat Island. After the American Rapids bridges project is complete and open to trolley traffic, the distance covered by the trolley and other park vehicle will be reduced and which in turn will reduce the greenhouse gas emissions.

**C. Smart Growth Location:**

Plans and investments should preserve our communities by promoting its distinct identity through a local vision created by its citizens.

(Addresses SG Law criteria b and c: to advance projects located in municipal centers; to advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan.)

- 1. Is this project located in a developed area?  
Yes  No  N/A
- 2. Is the project located in a municipal center?  
Yes  No  N/A
- 3. Will this project foster downtown revitalization?  
Yes  No  N/A
- 4. Is this project located in an area designated for concentrated infill development in a municipally approved comprehensive land use plan, waterfront revitalization plan, or Brownfield Opportunity Area plan?  
Yes  No  N/A

**Explain:** (use this space to expand on your answers above)

These two bridges are entirely located within the Niagara Falls State Park and provides access within park. Although the Park is located within the City of Niagara Falls, the bridges are not directly connected to the city street network.

**D. Mixed Use Compact Development:**

Future planning and development should assure the availability of a range of choices in housing and affordability, employment, education transportation and other essential services to encourage a jobs/housing balance and vibrant community-based workforce.

(Addresses SG Law criteria e and i: to foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income groups; to ensure predictability in building and land use codes.)

- 1. Will this project foster mixed land uses?  
Yes  No  N/A

## Smart Growth Screening Tool (October, 2012)

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2. Will the project foster brownfield redevelopment?  
Yes  No  N/A
3. Will this project foster enhancement of beauty in public spaces?  
Yes  No  N/A
4. Will the project foster a diversity of housing in proximity to places of employment and/or recreation?  
Yes  No  N/A
5. Will the project foster a diversity of housing in proximity to places of commercial development and/or compact development?  
Yes  No  N/A
6. Will this project foster integration of all income groups and/or age groups?  
Yes  No  N/A
7. Will the project ensure predictability in land use codes?  
Yes  No  N/A
8. Will the project ensure predictability in building codes?  
Yes  No  N/A

**Explain:** (use this space to expand on your answers above)

This project is not located in a municipal center, downtown revitalizaion plan area, brownfield opportunity area or municipally approved land use plan. These two bridges are entirely located within the Niagara Falls State Park and provides access within park. Although the Park is located within the City of Niagara Falls, the bridges are not directly connected to the city street network.

### **E. Transportation and Access:**

NYSDOT recognizes that Smart Growth encourages communities to offer a wide range of transportation options, from walking and biking to transit and automobiles, which increase people's access to jobs, goods, services, and recreation.

(Addresses SG Law criterion f: to provide mobility through transportation choices including improved public transportation and reduced automobile dependency.)

1. Will this project provide public transit?  
Yes  No  N/A
2. Will this project enable reduced automobile dependency?  
Yes  No  N/A

3. Will this project improve bicycle and pedestrian facilities (such as shoulder widening to provide for on-road bike lanes, lane striping, crosswalks, new or expanded sidewalks or new/improved pedestrian signals)?

Yes                       No                       N/A

**(Note:** Question 3 is an expansion on question 2. The recently passed Complete Streets legislation requires that consideration be given to complete street design features in the planning, design, construction, reconstruction and rehabilitation, but not including resurfacing, maintenance, or pavement recycling of such projects.)

**Explain:** (use this space to expand on your answers above)

These two bridges are entirely located within the Niagara Falls State Park and provides access within park. Although the Park is located within the City of Niagara Falls, the bridges are not directly connected to the city street network. By having a more direct and shorter connection to Goat Island, this will potentially encourage pedestrian and bicycle trips across the bridges to access different parts of the Niagara Falls State Park.

**F. Coordinated, Community-Based Planning:**

Past experience has shown that early and continuing input in the transportation planning process leads to better decisions and more effective use of limited resources. For information on community based planning efforts, the MPO may be a good resource if the project is located within the MPO planning area.

(Addresses SG Law criteria g and h: to coordinate between state and local government and inter-municipal and regional planning; to participate in community based planning and collaboration.)

1. Has there been participation in community-based planning and collaboration on the project?

Yes                       No                       N/A

2. Is the project consistent with local plans?

Yes                       No                       N/A

3. Is the project consistent with county, regional, and state plans?

Yes                       No                       N/A

4. Has there been coordination between inter-municipal and regional planning on the project?

Yes                       No                       N/A

**Explain:** (use this space to expand on your answers above)

This project will maintain an existing facility. The primary community concern will be the maintaining a good connectivity between different parts of the park and the historic and culturally significant component of the park. A stake holders meeting as well as a public hearing was held to obtain feed back from the stakeholders including the community groups.

**G. Stewardship of Natural and Cultural Resources:**

Clean water, clean air and natural open land are essential elements of public health and quality of life for New York State residents, visitors, and future generations. Restoring and protecting natural assets, and open space, promoting energy efficiency, and green building, should be incorporated into all land use and infrastructure planning decisions.

( Addresses SG Law criterion d :To protect, preserve and enhance the State’s resources, including agricultural land, forests surface and ground water, air quality, recreation and open space, scenic areas and significant historic and archeological resources.)

1. Will the project protect, preserve, and/or enhance agricultural land and/or forests?  

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
-----	--------------------------	----	--------------------------	-----	-------------------------------------
  
2. Will the project protect, preserve, and/or enhance surface water and/or groundwater?  

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------	-----	--------------------------
  
3. Will the project protect, preserve, and/or enhance air quality?  

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------	-----	--------------------------
  
4. Will the project protect, preserve, and/or enhance recreation and/or open space?  

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------	-----	--------------------------
  
5. Will the project protect, preserve, and/or enhance scenic areas?  

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------	-----	--------------------------
  
6. Will the project protect, preserve, and/or enhance historic and/or archeological resources?  

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
-----	-------------------------------------	----	--------------------------	-----	--------------------------

**Explain:** (use this space to expand on your answers above)

Since this project is within a state park, no agricultural land will be used for this project. This project will rehabilitate the bridges at the same location. The replacement bridges will be constructed at the same location or immediately adjacent to the existing location. If the existing location and alignment is chosen, then there will be no impact to the landuse. If a parallel alignment is chosen, the area where the existing bridges are located will be converted back to open space. Therefore this project will have no impact on surface water or ground water. This

project will preserve or enhance the air quality, open space, scenic areas as well as historic and/or archeological resources.

## Smart Growth Impact Statement (STEP 2)

**NYSDOT:** Complete a Smart Growth Impact Statement (SGIS) below using the information from the Screening Tool.

**Local Sponsors:** The local sponsors are **not** responsible for completing a Smart Growth Impact Statement. Proceed to Step 3.

---

### Smart Growth Impact Statement

PIN:5760.40

Project Name: The American Falls Bridges project

Pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act. This project has been determined to meet the relevant criteria, to the extent practicable, described in ECL Sec. 6-0107. Specifically, the project:

- **Improves existing infrastructure:** The scope of this project is to rehabilitate or replace BINs 5522000 and 5522010, the American Falls Bridges connecting connecting the Mainland USA to Goat Island, via Green Island. The subject bridges are located within the Niagara Falls State Park in the City of Niagara Falls, Niagara County.
- **Is located in a developed area:** These two bridges are entirely located within the Niagara Falls State Park and provides access within park. Although the Park is located within the City of Niagara Falls, the bridges are not directly connected to the city street network.
- **Has been progressed in coordination with regional planning, local government and municipal stakeholders:** This project will maintain an existing facility. The primary community concern will be the maintaining a good connectivity between different parts of the park and the historic and cultural significant component of the park. A stake holders meeting as well as a public hearing was held to obtain feed back from the stakeholders including the community groups.
- **Since this project is within a state park, no agricultural land will be used for this project. This project will rehabilitate the bridges at the same location. The replacement bridges will be constructed at the same location or immediately adjacent to the existing location. If the existing location and alignment is chosen, then there will be no impact to the landuse. If a parallel alignment is chosen, the area where the existing bridges are located will be converted back to open space. Therefore this project will have no impact on**

surface water or ground water. This project will preserve or enhance the air quality, open space, scenic areas as well as historic and/or archeological resources.

- **Strengthens the existing communities it serves by keeping a vital infrastructure link sustainable: Currently, the Niagara Falls Park trolleys are using a longer detoured route over the American Rapids to access Goat Island. This route is approximately 2 miles longer than the original route using the American Rapids bridges to access Goat Island. After the American Rapids bridges project is complete and open to trolley traffic, the distance covered by the trolley and other park vehicle will be reduced and which in turn will reduce the greenhouse gas emissions. .**
- **These two bridges are entirely located within the Niagara Falls State Park and provides access within park. Although the Park is located within the City of Niagara Falls, the bridges are not directly connected to the city street network. By having a more direct and shorter connection to Goat Island, this will potentially encourage pedestrian and bicycle trips across the bridges to access different parts of the Niagara Falls State Park.**
- **This project is not located in a municipal center, downtown revitalization plan area, brownfield opportunity area or municipally approved land use plan. These two bridges are entirely located within the Niagara Falls State Park and provides access within park. Although the Park is located within the City of Niagara Falls, the bridges are not directly connected to the city street network.**

This publically supported infrastructure project complies with the state policy of maximizing the social, economic and environmental benefits from public infrastructure development. The project will not contribute to the unnecessary costs of sprawl development, including environmental degradation, disinvestment in urban and suburban communities, or loss of open space induced by sprawl.

## Review & Attestation Instructions (STEP 3)

**Local Sponsors:** Once the Smart Growth Screening Tool is completed, the next step is to submit the project certification statement (Section A) to Responsible Local Official for signature. After signing the document, the completed Screening Tool and Certification statement should be sent to NYSDOT for review as noted below.

**NYSDOT:** For state-let projects, the Screening Tool and SGIS is forwarded to Regional Director/ RPPM/Main Office Program Director or designee for review, and upon approval, the attestation is signed (Section B.2). For locally administered projects, the sponsor's submission and certification statement is reviewed by NYSDOT staff, the appropriate box (Section B.1) is checked, and the attestation is signed (Section B.2).

### A. CERTIFICATION (LOCAL PROJECT)

*I HEREBY CERTIFY, to the best of my knowledge, all of the above to be true and correct.*

Preparer of this document:



Signature

Date 12/2/13

Title SENIOR DESIGN ENGINEER

Printed Name CAMERON SCHOU

Responsible Local Official (for local projects):

\_\_\_\_\_  
Signature

Date

Title

Printed Name

**B. ATTESTATION (NYSDOT)**

**1. I HEREBY:**

Concur with the above certification, thereby attesting that this project is in compliance with the State Smart Growth Public Infrastructure Policy Act

Concur with the above certification, with the following conditions (information requests, confirming studies, project modifications, etc.):

(Attach additional sheets as needed)

do not concur with the above certification, thereby deeming this project ineligible to be a recipient of State funding or a subrecipient of Federal funding in accordance with the State Smart Growth Public Infrastructure Policy Act.

**2. NOW THEREFORE**, pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act, to the extent practicable, as described in the attached Smart Growth Impact Statement.

NYSDOT Commissioner, Regional Director, MO Program Director,  
Regional Planning & Programming Manager (or official designee):

Ramsey E. Kahi PEN 576040  
Signature

Date 11/27/13

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## APPENDIX F-2.

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### Façade Treatments

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AMERICAN FALLS BRIDGES  
NYS DOT CONTRACT NO. D031136  
AESTHETIC TREATMENT OPTIONS FOR BRIDGE FACADE  
BIN 5522000 AND 5522010  
12/16/2014

### Scope of work

The scope of this study includes the following work:

- Evaluate bridge superstructure alternatives that will accommodate a stone or simulated stone fascia treatment that replicates the appearance of the existing bridges
- Identify several aesthetic treatment options that will replicate the stone facade on the existing crossings. As part of this task, review past reports and studies regarding aesthetic treatment options
- Identify feasible aesthetic treatments for each bridge superstructure alternative
- Provide conceptual cost estimates for the various aesthetic treatment options considered
- Summarize the results of this investigation in a report

### Bridge superstructure alternatives

The following superstructure replacement options were selected that will accommodate a simulated stone facade that replicates the existing bridges. Replacement Alternative, Option A1 Custom Precast Concrete Arch, Option A2 Precast, Pre-engineered Parabolic Arch System, Option A3 Prestressed Concrete Girders with a Soffit or No Soffit and Option B2 Steel Girder are identified in the draft design report as four of five feasible replacement options. The other feasible steel bridge concept identified in the draft design report is a tied arch bridge that will not readily accommodate, nor provide a similar appearance to the existing concrete and masonry arch structures. The custom precast concrete arch and precast parabolic arch system options are very similar in construction and appearance. For the sake of this study, they will both be treated as one replacement alternative, and the alternatives will be numbered as follows:

#### *Alternative 1: Precast concrete arch (custom or pre-engineered parabolic)*

This type of superstructure will accommodate a number of aesthetic treatments, including dimension masonry and/or masonry veneer using embedded masonry anchors, veneer panels and concrete form liner treatments.

#### *Alternative 2: Haunched prestressed concrete beams*

Aesthetic treatments best suited for this type of superstructure include masonry veneer and concrete form liners.

#### *Alternative 3: Steel girders*

Options that replicate the existing stone facade for this type of beam are limited. Having masonry directly attached or grouted to a steel load carrying element isn't recommended. Any water leakage or trapped moisture will accelerate deterioration of the primary members. For this reason, a veneer panel utilizing stone or concrete form liner supported by the fascia girders, or supported at the substructures and braced by the fascia girders, would be the only options considered.

This alternative is not well suited for these crossings. Disadvantages include:

- The elevation view of the structure is significantly altered because the arch intrados isn't continuous across the width of each span.
- For a panel supported by the fascia beams, a box girder shape or bottom lateral bracing may be required to resist torsion in the fascia girders.
- The fascia panels would extend well below the adjacent primary structural element. These panels would be more susceptible to impact damage from ice and debris because the primary members would not provide lateral support except at the crown of the arched panels.
- Galvanizing or metalizing of the structural steel would be necessary if this alternative was selected. Weathering steel is inappropriate due to the ever-present moisture near the river and falls, and paint systems require more frequent maintenance.

#### Aesthetic treatment options

Several options available to replicate the stone facade of the existing bridges are discussed below. Advantages and disadvantages of each are noted.

##### *Option A: Reuse existing dimension stone masonry (full thickness)*

Under this option, the stone in the existing bridges would be carefully removed, cleaned, and utilized to construct the fascia of the new bridges. The primary advantages of this option are that this would most closely preserve the historic integrity and appearance of the structures, and it provides sustainable construction.

This option presents some significant challenges, including:

- The poor condition of the existing concrete arches and the integral casting of the masonry into the existing bridges will complicate removal. Ordinarily, the arch fill could be removed with the concrete arch and spandrel walls intact. The construction contractor may not be able to place equipment on the arches to remove the arch fill due to the very poor condition and questionable structural integrity of the arches. Also, the integrity of the arch ring stone could be compromised with removal, especially given the poor condition of the arch concrete. Removal of the spandrel wall stone would compromise the structural integrity of the spandrel walls if the arch fill isn't removed. Therefore, it is likely that temporary shoring and/or wall bracing will need to be installed before removal of the stone at the spandrel walls and arch ring can commence.
- Based on a review of plans prepared in 1934, the masonry is cast integrally with the concrete, with alternate header courses in the spandrel wall. Based on a discussion with a masonry contractor and depending on the bond between the stone and concrete, attempting to extricate

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the stone cleanly from the concrete would risk stone breakage, and it is likely that some dressing (cutting) of the stone after removal would be required.

- Reinstallation is best accommodated with shoring and cast-in-place construction, especially for the arch ring. The size of the existing masonry could not be feasibly incorporated into a precast arch or wall panel. Special consideration will need to be made to properly anchor and install these very heavy units on a precast concrete structure.
- Significant loss of existing stone is anticipated due to existing missing pieces (noted in the 1969 rehabilitation drawings), existing broken pieces and pieces that would be damaged during removal. These losses would require replacement with new stone of similar color and texture. Alternatively and if a different type of barrier is proposed, the existing stone in the barrier might be utilized to replace broken pieces in the superstructure.
- Careful removal of the existing stone would lengthen the duration of the project and preclude conventional demolition of the structure. Because schedule is extremely critical for this project, any operation that increases the duration of the project will have very costly implications.

The degree in which the stone is reused could range from a random replacement in the new structure to a strict, historically accurate replacement whereby each stone is replaced in its relative position in the new bridges. The latter would be much more costly and require the following measures:

- For a replacement arch of the same geometry as existing, numbering the stones or otherwise identifying in order to track their position in the original structure.
- For a replacement arch with modified geometry, replacement in the same relative position with an accommodation of the modified geometry acceptable to the owner.

*Option B: Reuse existing dimension stone masonry (cut stone for veneer)*

Under this option, the stone in the existing bridges would be carefully removed, cleaned and dressed to provide a stone veneer on the fascia of the new bridges. Advantages of this option include preservation of the historic integrity and appearance of the structures, the ability to utilize the veneer stone as a bonded veneer to both concrete structural elements and prefabricated panels, reduced weight that will increase erection production and impart less load than replacement with full-depth stone, and sustainable construction methods are employed.

The complications associated with removal of the existing stone, breakage/losses and project duration noted in Option A would apply to this option as well. In addition, dressing of the stone to acquire the desired thickness would require either shipping the stone to a large sawing plant, or constructing a plant on site. As with the full dimension masonry reuse option above, replacement of the veneer could range from random replacement in the new structures to strict replacement in exact position and order as the existing bridges.

*Option C: New dimension stone masonry*

Under this option, new dimension stone masonry closely matching the existing type, sizes, color and pattern would be utilized in the new structures, where feasible. The primary advantages of this option are that it allows conventional demolition of the bridges and eliminates the other complications and costs associated with stone removal, dressing and reuse. The disadvantages of this option include:

- Loss of historic integrity as compared to options that reuse the existing stone.
- The same difficulties associated with stone size and weight as Option A.
- Less sustainable construction method due to the inability to reuse an existing resource.

*Option D: New stone veneer masonry*

Under this option, new stone veneer closely matching the existing type, sizes, color and pattern would be utilized in the new structures, where feasible. The primary advantages of this option are that it allows conventional demolition of the bridges, eliminates the other complications and costs associated with stone removal, dressing and reuse, offers the ability to utilize the veneer stone as a bonded veneer to both concrete structural elements and prefabricated panels, and reduces weight that will increase erection production and impart less load than replacement with full-depth stone. The disadvantages of this option include:

- Loss of historic integrity as compared to options that reuse the existing stone.
- Less sustainable construction method due to the inability to reuse an existing resource.

*Option E: New prefabricated stone veneer panels*

Under this option, prefabricated panels constructed with a stone veneer would be attached to the bridge facade. The primary advantages of this option are that it provides a higher quality product via fabrication under controlled (in-plant) conditions, and speeds construction of the new bridges. If new stone is used, it also allows conventional demolition of the bridges, and eliminates the other complications and costs associated with stone removal, dressing and reuse. If existing stone is removed, dressed, and reused, this option would better provide historical integrity and promote sustainable construction practices. The disadvantages of this option include:

- For new stone, the loss of historic integrity as compared to options that reuse the existing stone and less sustainable construction method due to the inability to reuse an existing resource.
- If existing stone is reused, the complications associated with removal of the existing stone, breakage/losses and project duration noted in Option A would apply.
- Jointing of the panels will likely alter the existing, staggered joint pattern.
- Because this system relies on thinner sections and special anchorages, durability and impact resistance of this system may not be as great as a solid, composite stone and concrete structure.

*Option F: Concrete form liner*

Under this option, the existing facades of the arch and spandrel walls would be constructed of Portland cement concrete and the existing stone pattern on the bridges would be replicated using a form liner. Technology now exists that will allow manufacture of custom form liners that exactly match the existing pattern on the bridges, if desired. Color matching of the existing bridges could also be achieved by using integrally colored concrete, concrete staining or a combination of these methods. The advantages of this option are that the stone pattern is integrally cast into the structure without the need to grout course spaces or joints, costs associated with stonework are eliminated and speed of construction is significantly increased. Disadvantages of this option include loss of historic character, less sustainable construction, and concrete is more susceptible to environmental effects and impact damage than sound stone.

Cost considerations

As discussed above, there are several aesthetic fascia treatment options for each alternative, and choices that can be made for several options. For instance, reused stone could be installed without regard to location in the existing structure, or it could be placed in the same relative position on the new bridge. Or the use of a prefabricated panel with stone veneer could utilize existing stone or new stone. These decisions will affect the cost for each option. For conciseness in developing preliminary costs and for uniformity, we are assuming the following:

- Exact repositioning of stone, or exact replication of the existing stone pattern for new stone or form liners will not be required. An estimated cost premium is tabulated for matching the existing stone pattern, where feasible.
- Except for the form liner option, new stone will be utilized for prefabricated panels; an estimated cost premium is provided for reusing existing stone.
- Because several bridge railing options are being considered, the costs are based on replicating the existing stone pattern on the faces of the arch ring, spandrel walls and piers only.

Also note that these are “order of magnitude” costs, best judged relative to the cost of other options. There is very limited historic information for this type of stonework. We have relied on limited State unit price histories, estimates in prior reports for this project, and discussions with stone suppliers and contractors. We’ve also attempted to factor in associated costs for these options to provide a meaningful comparison. For example, we have included additional costs to account for stone removal, shoring, bracing, and delays to the project that will affect demolition and cofferdam costs, based on 2 months additional time for stone removal (selective demolition) versus the baseline (no aesthetic treatment). At this preliminary phase of the project and in the absence of detailed design information, we used the delay cost to the contractor based on liquidated damages that would be assessed for not completing the project on time. We’ve provided separate columns to help clarify. Options and costs are summarized in the tables appended to this report.

### Other considerations

#### *Use of LiDAR scanning for facade replication*

Light Detection and Ranging (LiDAR) scanning can be used to create intricate 3D computer models of the existing bridges. Potential uses of this technology for historic preservation include:

- Historic American Engineering Record (HAER) documentation of the existing bridges that will mitigate the loss of these historic resources.
- Documentation of the existing stone patterns on the bridge facades. Photographs and cloud files created from scanning can be utilized to document exact stone positions that can be replicated during re-installation of new stone, or the cloud file can be utilized to fabricate custom form liner panels that reproduce the stone patterns in new concrete surfaces. At this time, replication of the joint pattern from a LiDAR scan has been verified. However, the ability to exactly match both the joint pattern and relief from a laser scanned cloud file has not yet been verified. Discussions are on-going with form liner manufacturers to determine their current capabilities.

### References

Information and cost estimate data was utilized from the following sources in the development of this report:

1. Draft Design Report, PIN 5760.40 dated October 2014.
2. NYSDOT Pay Item Catalog.
3. Concept Design Report, Goat Island Bridges Rehabilitation, Niagara Falls State Park, prepared for New York State Office of Parks, Recreation and Historic Preservation by Cannon Design/FRA Engineering, August 16, 2005.
4. Structure Alternative Feasibility Study for The Replacement of the Goat Island Bridges, prepared for New York State Office of Parks, Recreation and Historic Preservation by Bergmann Associates and LP Ciminelli, December 2008.

**Alternative 1 Precast Concrete Arches**

Option	Description	Estimated costs						Total cost incl. pattern matching
		Base cost	Reuse stone	Existing pattern match	Special shoring/bracing	Delay costs <sup>2</sup>		
A	Reuse exist. dim. stone <sup>1</sup>	\$4,020,000	---	\$225,000	\$215,000	\$280,000	\$4,740,000	
B	Reuse stone for veneer	\$3,190,000	---	\$115,000	\$215,000	\$280,000	\$3,800,000	
C	New dimension stone <sup>1</sup>	\$2,990,000	NA	\$800,000	NA	NA	\$3,790,000	
D	New stone veneer	\$2,150,000	NA	\$380,000	NA	NA	\$2,530,000	
E	New prefab. stone veneer panels <sup>1</sup>	NA	NA	NA	NA	NA	NA	
F	Concrete form liner	\$280,000	NA	\$195,000	NA	NA	\$475,000	

<sup>1</sup> Not feasible to use for arch ring; assume stone veneer

<sup>2</sup> Assumes \$7,000/day of delay x 40 days for selective stone removal  
NA denotes Not Applicable

**Alternative 2 Haunched Prestressed Concrete Beams**

Option	Description	Estimated costs						Total cost incl. pattern matching
		Base cost	Reuse stone	Existing pattern match	Special shoring/bracing	Delay costs <sup>2</sup>		
A	Reuse exist. dim. stone <sup>3</sup>	\$3,470,000	---	\$150,000	\$215,000	\$280,000	\$4,115,000	
B	Reuse stone for veneer	\$3,190,000	---	\$115,000	\$215,000	\$280,000	\$3,800,000	
C	New dimension stone <sup>3</sup>	\$2,440,000	NA	\$540,000	NA	NA	\$2,980,000	
D	New stone veneer	\$2,150,000	NA	\$380,000	NA	NA	\$2,530,000	
E	New prefab. stone veneer panels	NA	NA	NA	NA	NA	NA	
F	Concrete form liner	\$280,000	NA	\$195,000	NA	NA	\$475,000	

<sup>2</sup> Assumes \$7,000/day of delay x 40 days for selective stone removal

<sup>3</sup> Not feasible to use for concrete beams; assume stone veneer used for beams  
NA denotes Not Applicable

Alternative 3 Steel Beams									
Option	Description	Estimated costs							
		Base cost	Reuse stone	Existing pattern match	Special shoring/bracing	Delay costs <sup>6</sup>	Total cost incl. pattern matching		
A	Reuse exist. dim. stone <sup>4</sup>	\$3,020,000	---	\$330,000	\$60,000	\$77,000	\$3,487,000		
B	Reuse stone for veneer <sup>4</sup>	\$2,680,000	---	\$295,000	\$60,000	\$77,000	\$3,112,000		
C	New dimension stone <sup>4</sup>	\$2,680,000	NA	\$540,000	NA	NA	\$3,220,000		
D	New stone veneer <sup>4</sup>	\$2,340,000	NA	\$380,000	NA	NA	\$2,720,000		
E1	New prefab. stone veneer panels attached to beams <sup>5</sup>	\$2,340,000	\$845,000	\$380,000	\$0 - 215,000	\$0 - 280,000	\$2,720,000 - \$4,060,000		
E2	New prefab. stone veneer panels free standing <sup>5</sup>	\$2,700,000	\$845,000	\$380,000	\$0 - 215,000	\$0 - 280,000	\$3,080,000 - \$4,420,000		
F	Concrete form liner <sup>5</sup>	\$470,000	NA	\$195,000	NA	NA	\$665,000		

<sup>4</sup> Substructure option used in conjunction with superstructure Option E1

<sup>5</sup> Option used for both substructure and superstructure. Range of costs given for new stone or reusing stone for stone veneer options.

<sup>6</sup> Assumes \$7,000/day of delay for selective stone removal (11 days substructures and 40 days for entire structures)

NA denotes Not Applicable